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# ACO Pacific, Inc.

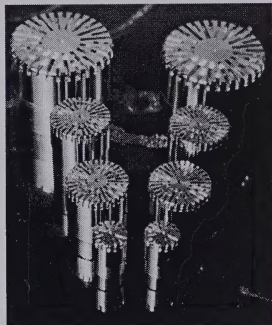
2604 Read Ave.  
Belmont, CA 94002 U.S.A.  
Tel: 650-595-8588 FAX: 650-591-2891  
e-mail: [acopac@acopacific.com](mailto:acopac@acopacific.com)

Established in 1978 ACO Pacific, Inc. is chartered to serve the needs of both End-users and Equipment Manufacturers. Headquartered in the San Francisco Bay Area, ACO Pacific, Inc. has manufacturing facilities and suppliers both in California and internationally.



**ACO Pacific's Product Family**  
Measurement Microphones  
Microphone Preamplifiers  
Microphone Power Supplies  
SPL Calibrators  
Simple Intensity™ Sound Intensity Systems  
Very Random™ Noise Generators

Our OEM relationships include Hewlett Packard, Audio Precision, SPS, DRA Labs and many other large and small instrumentation and process control manufacturers. Our End-user customers include: manufacturers of loudspeakers; computers and peripherals; heavy equipment; automobiles and automotive parts - tires, brakes, engines; universities; aerospace; and an alphabet soup of government agencies US and foreign.



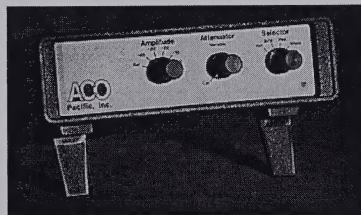
## The "Alternative"

**Type 1 Measurement Microphones**  
1, 1/2 and 1/4 Inch Models  
Stainless Steel  
and  
Titanium Diaphragms  
Quartz Insulators  
Frequency Responses to 120 kHz  
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## Model 3024

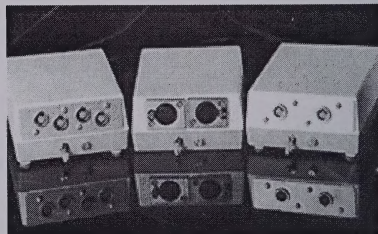
### Very Random™ Noise Generator

Pink and White Noise, 1kHz Sine Outputs  
1.6 Hz to 39 kHz (-3dB)  
Portable - Battery and AC Power



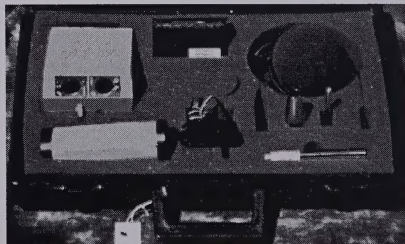
## ACOustical Interface™

Precision Microphone Power Supplies  
2 and 4 Channels - Gain Available  
XLR and Lemo™ Connectors



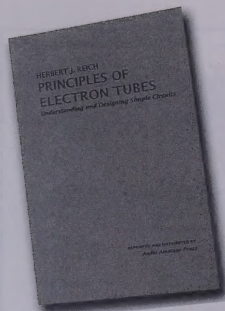
## PS9200KIT

Includes: PS9200 (XLR) Power Supply  
AC Adaptor  
4012 Preamplifier w/CA4012-5 Cable  
Selection of 1/2 Inch Type 1 Microphone  
WS1 - 3 inch Windscreen  
SC1 Die Cut Storage Case (SC2 optional)  
Options: 511E SPL Calibrator (shown)  
"G" Gain Stage



# ACOustics Begins With ACO™





## PRINCIPLES OF ELECTRON TUBES

Understanding and Designing Simple Circuits

by Herbert J. Reich

All-time favorite from 1941 first served as text for beginners—today ranks as most comprehensive tube book available. Professor Reich covers physics of tube operation, topologies and classifications of amplifiers, and everything in between. Exercise questions with answers supplied for many sections help to check the reader's grasp of the material.

1995, 1941, 398pp., 6" x 9", softbound, ISBN 1-882-580-8007-9. Shipping wt: 2 lbs.

**BKAA34 .... \$34.95**

**CLASSIC REPRINT!**

## BEGINNER'S GUIDE TO TUBE AUDIO DESIGN

by Bruce Rozenblit

The best beginner's guide on vacuum tube audio available! Rozenblit explains what vacuum tubes do and how to use them. This book gives you the complete picture of tube audio design. Not just for beginners, you'll also find chapters on stabilization and testing, how to work effectively as a designer and descriptions of 13 famous and classic amps and preamps. A hands-on guide to construction techniques, tools and choosing components and tubes is included. 1997, 134pp., 8½" x 11", softbound, ISBN 1-882580-13-3. Shipping wt: 2 lbs.

**BKAA42 ..... \$24.95**



"In the world of do-it-yourself audio books, this one rises, in my humble opinion, to the top of the pile."

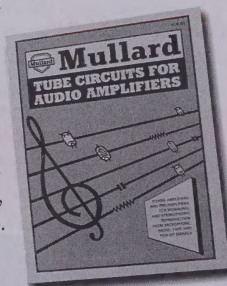
Scott Frankland,  
Glass Audio 6/97

## MULLARD TUBE CIRCUITS FOR AUDIO AMPLIFIERS

by Mullard Ltd.

The complete guide to building eleven power and control amps for a sound system with vacuum tubes, featuring a four-chapter tutorial on sound quality which is solid guidance on achieving the best sound with tubes. First published in 1959 by Mullard, one of Britain's premier valve manufacturers, this is a do-it-yourself classic. Complete with sheet metal diagrams, parts lists, and performance data. 1993, 1959, 142pp., 8" x 10", softbound, ISBN 1-8825-8003-6. Shipping wt: 1 lb.

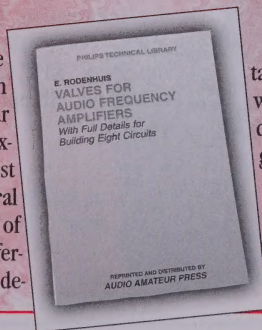
**BKAA27 ..... \$16.95**



## VALVES FOR AUDIO FREQUENCY AMPLIFIERS

by E. Rodenhuis

Originally published as part of the Philips series on electronic valves in 1954, this book encourages the amateur and professional amplifier builder to experiment with design elements, not just work from a blueprint. Contains general hints on amplifier design, the uses of valve data and the functions of the different stages of an amplifier and includes de-



tailed descriptions of eight amplifier designs in which the reader will find a wealth of practical data, measurements and interesting features. The goal is practical achievement; theoretical considerations and arguments have been omitted. 1997, 1954, 144pp., 5¾" x 8", ISBN 1-882580-16-8. Shipping wt: 1 lb.

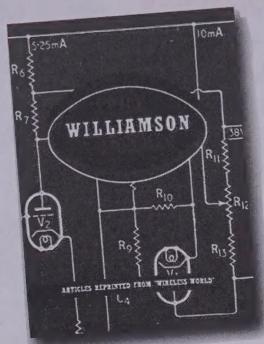
**BKAA43 ..... \$16.95**



## THE WILLIAMSON AMPLIFIER

by D.T.N. Williamson

Contains all the articles written about the amplifier by Mr. Williamson. Introduced by *Wireless World* in 1947 as merely one of a series of amplifier designs, the "Williamson" has for several years been widely accepted as the standard of design and performance. Published by exclusive arrangement, it is not only a singular resource, but an important historical document giving the reader



unique insights into the tube designer's problems and compromises. Over 40 detailed illustrations, parts lists, and complete construction details. 1990, 1947, 40pp., 8½" x11", saddlestitched, ISBN 0-9624-1918-4. Shipping wt: 1 lb.

**BKAA6 .....\$4.95**

**CLASSIC REPRINT!**



## AUDIO FREQUENCY AMPLIFIER DESIGN

A Publication of The General Electric Co., Ltd. of England

**Reprinted and distributed by Audio Amateur Press**

1957 reprint from the research laboratories of General Electric Company (UK) presents seventeen high quality amplifier designs covering a range of 5W to 1100W. All based on tubes, these designs cover applications from a simple amplifier for home use to very large units for PA applications. The book is a goldmine of information delivered in a straightforward fashion. It provides firm guidance for the tube enthusiast and full explanations of all the important considerations in designing quality amplification. 1994, 1957, 126pp., 6"x9", softbound, ISBN 1-8825-8005-2. Shipping wt: 1 lb.

**BKAA31.....\$19.95**

**CLASSIC REPRINT!**

## OPERATING FEATURES OF THE AUDION

by Edwin H. Armstrong

This essay first appeared in the *Journal of the New York Academy of Sciences* in 1917, and is now reprinted as a 32-page illustrated pamphlet. Major Armstrong was the inventor of the superheterodyne circuit, FM broadcasting, and dozens of other modern engineering designs. Included is the very first authoritative report on the triode vacuum tube's capabilities. 1993, 1917, 32pp., 6" x9", softbound. Shipping wt: 1 lb.

**BKAA26 .....\$6.95**

## THE BRUTE: A SUPER AMPLIFIER FOR THE DO-IT-YOURSELF PERFECTIONIST

by Edward T. Dell, Jr.

Complete with photos, drawings, parts list, and schematic, this reprint, by permission of *Stereophile*, describes the construction of a tube-type amplifier which is a deluxe version of the Dynaco Stereo 70. This is the ultimate project either for learning or improving construction skills, and acquiring a knowledge of amplifiers only hands-on experience brings. The amplifier itself is supported by a massive power sup-

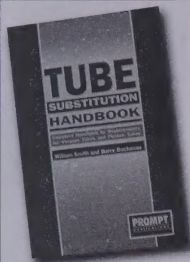


ply, equipped with metering capabilities for all voltages, and constructed with quality components. The result is a powerful high-end amplifier at a reasonable cost. Includes updated source information. Reprinted 1997, 1966, 16pp., 8½" x11", saddlestitched. Shipping wt: 1 lb.

**BKAA23  
\$7.95**



**TUBE  
MANUALS!**



## **TUBE SUBSTITUTION HANDBOOK:** **Complete Handbook to** **Replacements for Vacuum Tubes** **and Picture Tubes**

by William Smith and Barry Buchanan

Accurate, up-to-date, with complete instructions for three sections: vacuum tubes, picture tubes, and tube basing diagrams. 1992, 149pp., 6" x 9", softbound, ISBN 0-7906-1036-1. Shipping wt: 1 lb.

**BKS30.....\$24.95**

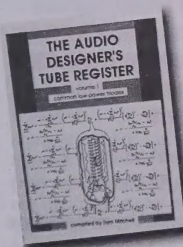
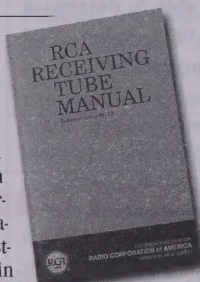
## **RCA RECEIVING TUBE MANUAL**

*RCA Technical Series #RC-19*

by Radio Corporation of America

1959 reprint of a classic manual prepared to assist those who worked or experimented with vacuum tube circuits. Worthwhile reading for engineers, service technicians, experimenters, students, radio amateurs, audiophiles, and all others technically interested in tubes, the material in this book is broad in scope as well as deep in detail. Filled with charts and graphs. 1959, 384pp., 5 1/2" x 8 3/8", softbound. Shipping wt: 2 lbs.

**BKAE4.....\$12.95**



## **THE AUDIO DESIGNER'S TUBE REGISTER, VOLUME 1**

by Tom Mitchell

This book, based on data from author Tom Mitchell's lab, features complete electrical and mechanical specifications for the 6C4, 6C10, 6CG7, 6DJ8, 6EU7, 6K11, 12AT7, 12AU7, 12AX7, 12AY7, 12BH7, 12DW7, 5751, and 6922. Each tube type is illustrated by eleven separate graphs; plate characteristic curves; transfer characteristic curves;  $\mu$  and gm for both Ec and Ib; rp

for both Eb and Ib, and three useful graphs not given by any manufacturer—constant current curves, Rdc(Eb), and Rdc(Ib). These graphs can be cross-referenced to seven different data tables for quick analysis. 1993, 144pp., 8 1/2" x 11", spiralbound, ISBN 0-9628-1701-5. Shipping wt: 1 lb.

**BKMC2.....\$17.95**

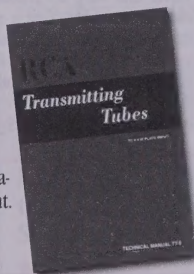
## **RCA TRANSMITTING TUBES**

*Technical Manual TT-5*

Radio Corporation of America

RCA manual TT-5 reprint features outlines, technical data, typical circuits. Includes types up to 4kW plate input. 316pp., 5 3/8" x 8 1/4", softbound. Shipping wt: 2 lb.

**BKAE12.....\$12.95**



## **RADIOTRON DESIGNER'S HANDBOOK ON CD-ROM**

original book by Langford-Smith,  
CD-ROM produced by

Audio Amateur Inc.

The complete fourth edition (originally 1,498 pages) of this classic text is now available on a single CD-ROM disc. A huge repository of tube theory and practice. Self-explanatory handbook covers design and application of radio receivers and audio amplifiers. Extensive cross-references to other sources. Includes Adobe Acrobat access software. The 50-page table of contents is available for lookup of any of the approximately 7,000 linked items. Pages may be printed on a suitable printer (24-pin dot matrix, or better, laser or inkjet-type). Requires IBM 386+. 1996, 1952. Shipping wt: 1 lb.

**CDRDH.....\$29.95**

**NOW AVAILABLE AS A BOOK!**

## **RADIOTRON DESIGNER'S HANDBOOK**

by Langford-Smith

Now available as a book, the 4th edition of the classic text is reprinted. This huge volume covers theory and practice of vacuum tubes used in radio receivers and audio amplifiers. CD-ROM of this volume also available (see above) (#CDRDH). The combination of the two provide excellent research capabilities in understanding the wealth of information provided here. 1998, 1952, ISBN 750636351. Shipping wt: 6 lbs.

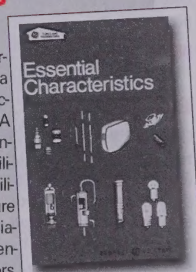
**BKB50.....\$66.95**

## **GE TUBES: ESSENTIAL CHARACTERISTICS**

from General Electric

Reprint of GE's 1973 fourteenth edition tube data book, giving all the characteristics starting with 00A and 01A, including a foreign-to-American interchangeability chart, an industrial/military cross reference, picture tube data and basing diagrams, and a section on entertainment semiconductors. 1973, 473 pp., 5 1/2" x 8 1/2", softbound. Shipping wt: 2lb.

**BKAE7.....\$12.95**



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Or Call 1-888-924-9465



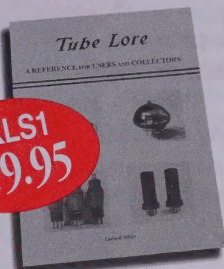
## TUBE LORE

### A Reference for Users and Collectors

by Ludwell Sibley

Aids the present-day user and collector of electron tubes by providing historical insight and specific technical data. It supplies information, from a variety of sources, on the characteristics and design relationships of tubes. With this insight, the user (equipment restorer, audiophile, etc.) may be helped in finding suitable replacement tubes and the collector may be able to determine the nature and uses of a fresh acquisition. 1996, 186pp., 8½" x 11", softbound, ISBN 0-9654683-0-5. Shipping wt: 2 lb.

**BKLS1**  
**\$19.95**

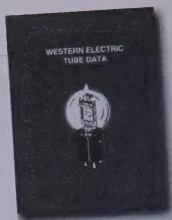


## WESTERN ELECTRIC TUBE DATA

from Western Electric

Keep valuable data at your fingertips with the use of this complete tube manual. An impressive collection of easy-to-use charts, diagrams, tables, and graphs for the top quality tubes, rectifiers, diodes, thyratrons, and lamps produced by Western Electric. Chapters which cover classifications, applications, dimensions, connections, base and mounting facts, capacitances and filament ratings are included. Extensive information about the characteristics, operating conditions, and outputs of a wide variety of Western Electric tubes makes this a valuable reference. 1994, 243pp., 8½"x11", softbound. Shipping wt: 2 lb.

**BKAE6 ..... \$17.95**



## COMPREHENSIVE RADIO VALVE GUIDE SERIES

PUBLICATIONS OF G.C. ARNOLD PARTNERS

These volumes contain characteristics and base connections for valves used in many applications. The chronological series covers the years from 1934 through 1963.

### BOOK 1

Contains characteristics and base connections for English and American valves from the years 1934 to 1951. 1994, 1951, 55pp., 5¾" x 8¾", softbound, ISBN 1-8988-0501-6. Shipping wt: 1 lb.

**BKRV1 ..... \$7.95**

### BOOK 2

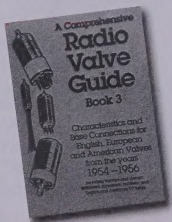
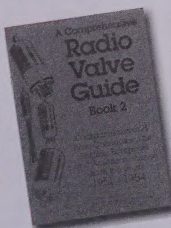
Base connections from the years 1951 to 1954 are the focal point of this second volume. 1994, 1953, 41pp., 5¾" x 8¾", softbound, ISBN 1-8988-0502-4. Shipping wt: 1 lb.

**BKRV2 ..... \$7.95**

### BOOK 3

Concentrates on English, European, and American valves from 1954 and 1956. A comprehensive section dedicated to screened tetrodes and pentodes which appeared too late for classification closes this interesting edition. 1994, 1956, 37pp., 5¾" x 8¾", softbound, ISBN 1-8988-0503-2. Shipping wt: 1 lb.

**BKRV3 ..... \$7.95**



### BOOK 4

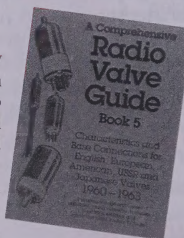
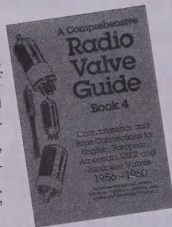
English, European, American, Russian, and Japanese valves of 1956 to 1960. Complete with an index of Russian valves. Information tables on radio receiving, transmitting, and C.R.T. designation systems are also included. 1994, 1960, 46pp., 5¾" x 8¾", softbound, ISBN 1-8988-0504-0. Shipping wt: 1 lb.

**BKRV4 ..... \$7.95**

### BOOK 5

An easy-to-use valve base key begins this journey through the radio valves of 1960 to 1963. A table of additional valves that were not classified earlier, in addition to a substantial index of Russian valves and television C.R. tubes, complete this volume. 1994, 1963, 44pp., 5¾" x 8¾", softbound, ISBN 1-8988-0505-9. Shipping wt: 1 lb.

**BKRV5 ..... \$7.95**

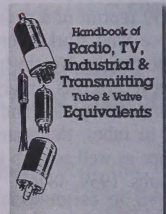


## HANDBOOK OF RADIO, TV, INDUSTRIAL & TRANSMITTING TUBE & VALVE EQUIVA- LENTS

a publication of G.C.  
Arnold Partners

Provides a comprehensive listing of equivalents for a variety of valve types, using convenient lists and indexes which allow you to locate a quality equivalent in mere moments. Helpful directions and an index of valve and tube types are included. UK, 1994, 1974, 60pp., 5½" x 8¼", softbound, ISBN 1-8988-0506-7. Shipping wt: 1 lb.

**BKRV6 ..... \$7.95**







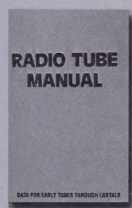
## 75 YEARS OF WESTERN ELECTRIC TUBE MANUFACTURING

by Bernard D. Magers

Subtitled "A Log Book History of Over 750 WE Tubes including Dates of Manufacture," this informative

volume was written by a WE Senior Engineer. The book chronicles the history of the 785 tubes Western Electric produced during 1913-1988, and provides a listing of the tubes with descriptions for easy reference. In addition to the tube specs and backgrounds, there are also sections on nomenclature, references, a brief history, "D" tube specifications, other WE tubes and a summary of manufacturing notes. Many photos and drawings. 1992, 144pp., 8 1/4" x 11", softbound, ISBN 0-9632-4401-9. Shipping wt: 2 lb.

**BKAES .....\$19.95**

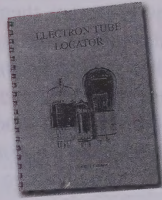


## RADIO TUBE MANUAL

from Antique Electron-  
ic Supply

A practical addition to any tube manual library. Comprehensive and easy to use, the manual lets you quickly locate detailed information about specific radio tubes. The contents include an elaborate radio tube characteristics chart with a basing connection reference, tube outline drawings, tube symbols and base diagrams, and data concentrating on special purpose tubes, flat hearing aid tubes, and Western Electric tubes. A glossary of tube terms and an interpretation of tube ratings is also included. 1987, 39pp., 5 3/8" x 8 1/2", softbound. Shipping wt: 1 lb.

**BKAES .....\$4.95**



## ELECTRON TUBE LOCATOR

by George H. Fathauer

A comprehensive listing of receiving, transmitting and industrial tube types manufactured in the US and Europe with references to sources of complete data. Includes tube functions, filament/heater characteristics and basing diagrams. Lists approximately 12,000 different tube types. 1994, 322pp., 8 1/2" x 11", spiralbound. Shipping wt: 3 lbs.

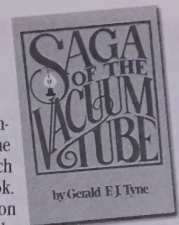
**BKAES .....\$29.95**

## SAGA OF THE VACUUM TUBE

by Gerald E. J. Tyne

Covering the history of the evolution of the thermionic vacuum tube and tracing its complex genealogy, the essential facts to assist in the identification of such tubes made prior to 1930 are presented in this book. Mr. Tyne spent several decades researching information on the vacuum tube, much of which came from the records and archives of various European manufacturers. 1994, 1977, 494pp., 5 1/2" x 8 1/2", softbound, ISBN 0-6722-1470-9. Shipping wt: 2 lbs.

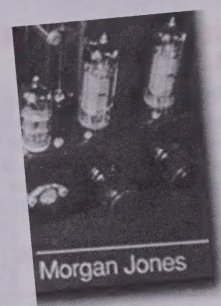
**BKA1 .....\$18.95**



## VALVE AMPLIFIERS

by Morgan Jones

Popular, practical guide for tube users. Morgan Jones takes the reader through each step in the process of design, starting with a brief review of electronics fundamentals. Investigating all areas of amplifier design, the book culminates in the design for a high-quality preamplifier. Safety, practical aspects, layout, component choice and construction techniques are all covered. 1995, 374pp., 6" x 9 1/4", softbound, ISBN 0-7506-2337-3. Shipping wt: 2 lbs.



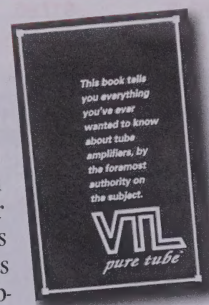
**BKB40  
\$42.95**

## THE VTL VACUUM LOGIC TUBE BOOK

by David Manley

First published in 1988, the *VTL Book* quickly sold thousands of copies in two editions and was labeled "an audio classic" almost immediately. Now it's back, and bigger and better than ever. Besides containing all of Vacuum Tube Logic's circuit diagrams and other operational hints, it also contains lots of hard-to-find tube information such as tube characteristics, base diagrams, substitutions, measuring setups, inverse R-1A network, tables and formulas for power conversion, ohms-per-foot resistance, oscillograms, output class definitions, and much, much more! Included is a broad (and often contentious) discourse by the author on other interesting topics such as loudspeakers, cables, digital and analog, transformers, cartridges, and preamps. 1994, 183pp., 5 3/8" x 8 3/8", softbound. Shipping wt: 1lb.

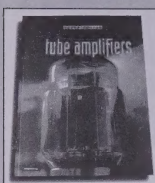
**BKVT1 ..... \$19.95**





## TUBE AMPLIFIERS

by Kavsek and Kavsek



Focuses on the unique design of tube amplifiers. More than 200 beautiful color photographs show almost 70 devices from a variety of manufacturers, most of them still available on the market. Historical and technical background information is given about the different types of tubes and amplifiers. The first book of its kind. For more information visit the website at <http://www.allegro.co.at/allegro/>. 9 5/8" x 12 1/2", hardbound, ISBN 3-901462-00-7. Shipping wt: 4 lbs.

**BKA02 .....\$59.95**

## VINTAGE HI-FI SPOTTER'S GUIDE VOL. 1 (1947-62)

by Charles Kittleson, editor

Copies of catalog pages and advertisements for hi-fi components from 1947-1962, including Fisher, Eico, Heathkit, McIntosh, Scott, Harman-Kardon, Marantz, Pilot, Dynaco, Radio Craftsmen, and others. Great source of information, not to mention fun to read. 1991, 80pp., 8 1/2" x 11", softbound. Shipping wt: 1 lb.

**BKAE3/1 .....\$17.95**

## VINTAGE HI-FI SPOTTER'S GUIDE VOL. 2 (1929-1963)

by Charles Kittleson, editor

Supplement to Volume 1. Contains more ads and catalog pages dating from 1929-1963, which also includes Speaker Spotter. Includes amps, preamps, speakers, phonographs, receivers, and other equipment and models not covered in Volume 1. 1993, 88pp., 8 1/2" x 11", softbound. Shipping wt: 1 lb.

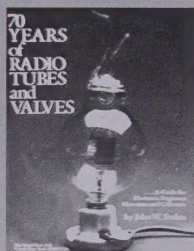
**BKAE3/2 .....\$17.95**

## 70 YEARS OF RADIO TUBES AND VALVES

by John W. Stokes

From screen grid to Nu-vistor, from metal tube to miniature, New Zealand's John Stokes has seen it all during his half-century-plus in radio and TV. Stokes outlines the evolution of radio receiving tubes and the part they played in the development of the domestic radio receiver. Information is presented primarily for the benefit of tube collectors—particularly Americans. A reference for all who are interested in the history and development of the vacuum tube. 1992, 1982, 256pp., 8 1/2" x 11", softbound, ISBN 0-9115-7260-0. Shipping wt: 3 lbs.

**BKV1 .....\$29.95**

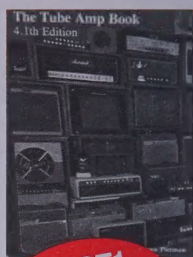


# GUITARS & TUBES

## THE TUBE AMP BOOK

by Aspen Pittman

Fourth edition of the Groove Tubes classic contains hundreds of pages of amp diagrams from more than two dozen manufacturers. In addition to the use of color photos, coverage of mods, maintenance, and history also add interesting and valuable dimensions to the book. If you love tube guitar amps, this book is for you. 1993, 1986, 768pp., 5 3/4" x 8 1/4", softbound. Shipping wt: 3 lbs.



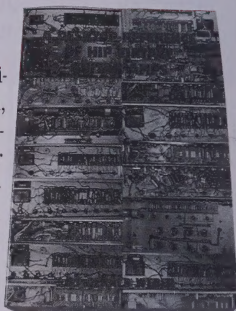
**BKGT1  
\$29.95**

## A DESKTOP REFERENCE OF HIP VINTAGE GUITAR AMPS

by Gerald Weber

If you have questions about guitar amplifiers—how to fix them, how to restore them, or how to hot-rod them—this book has the answers. Written for the guitarist or collector who desires a common sense approach to understanding the essence of vintage tube amps and vintage tube tone. This book is not written for engineers, it does not contain engineering formulas, polar mathematic equations, or abbreviations that are assumed you should know. Gerald Weber, a regular columnist for *Vintage Guitar* magazine, shares the knowledge he has accumulated over the years of repairing and building his line of Kendrick amps. 1994, 507pp., 9" x 12", softbound, ISBN 0-9641060-0-0. Shipping wt: 3 lbs.

**BKHL12 .....\$26.95**

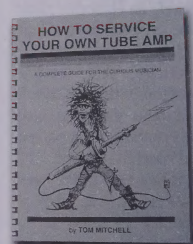


## HOW TO SERVICE YOUR OWN TUBE AMP: A Complete Guide for the Curious Musician

by Tom Mitchell

Written in an informal, nontechnical, and entertaining style, this easy-to-read guidebook takes readers on a step-by-step "crash course" in electronics while teaching troubleshooting, servicing, and problem prevention. Includes in-depth coverage of tubes and transformers, troubleshooting flow charts, many amplifier modifications, a maintenance checklist and much useful reference information. 1991, 250pp., 8 1/2" x 11", spiralbound, ISBN 0-9628-1700-7. Shipping wt: 2 lbs.

**BKMC1 .....\$29.95**







## THE ART OF THE AMPLIFIER

by Michael Doyle

*The Art of the Amplifier* pays tribute to the mechanical and aesthetic beauty of the tube amp, focusing on guitar amplifiers but also examining hi-fi audio amps and very ornate early radios. The book contains 80 stunning

full-color pages, nearly 200 photos and informative commentary, with amplifiers grouped by manufacturers. Represented are Ampeg, Dumble, Fender, Groove Tubes, Gibson, Gretsch, Hiwatt, Marshall, Mesa Boogie, Peavey, Vox, Watkins, and many others. 1996, 80pp., 9" x 12", softbound, ISBN 0-7935-3989-7.

**BKHL11 .....\$22.95**

## A HISTORY OF MARSHALL VALVE GUITAR AMPLIFIERS

1962-1992—The Illustrated Story of "The Sound of Rock"

by Michael Doyle

Marshall amps have defined the sound of rock for a generation. This book explores the British company responsible for that sweet overdrive sound, tracing the impressive lineage of its tube guitar amps. Detailed chronologies of the various model and serial numbers, straightforward explanations of their features and construction, and aesthetic evaluations of the results. Includes hundreds of black-and-white photos, a 32-page color section, and another 32-page color appendix that reproduces parts of the Marshall catalog of the 1960's. 1993, 254pp., 9" x 12", softbound, ISBN 0-7935-2509-8. Shipping wt: 3 lbs.

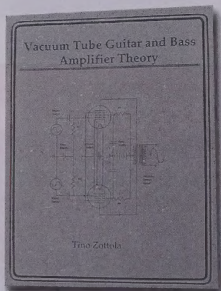
**BKHL2 .....\$32.95**

## VACUUM TUBE GUITAR AND BASS AMPLIFIER THEORY

by Tino Zottola

Numerous schematics and diagrams highlight this easy-to-understand explanation of the theory of amplification and other related topics. 1996, 72pp., 8½" x 11", ISBN 0-9332-2496-6. Shipping wt: 1 lb.

**BKBS1 .....\$10.95**

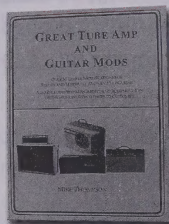
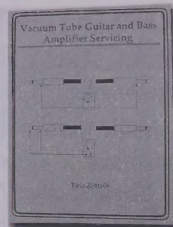


## VACUUM TUBE GUITAR AND BASS AMPLIFIER SERVICING

by Tino Zottola

Safety precautions; tools and test instruments; user-serviceable problems; amp disassembly; preventative maintenance; dead amps; strange sounding amps; much, much more. 1996, 154pp., 8½" x 11", softbound, ISBN 0-9332-2490-7. Shipping wt: 1 lb.

**BKBS2 .....\$12.95**



## GREAT TUBE AMP AND GUITAR MODS

by Mike Thompson

50+ useful mods for Fender, Marshall amps plus the guitar. Also has speaker cabinet and

equipment tips for the customizing musician. Includes special effects repair; signal tracing; component testing; substitution; bias adjustment; tube matching; more. 1975, 1968, 174pp., 5¾" x 8½", softbound, ISBN 0-4862-3217-4. Shipping wt: 2 lbs.

**BKBS3 .....\$14.95**

## BUILD YOUR OWN AUDIO VALVE AMPLIFIERS

by zur Linde

Much information about the operation of vacuum tubes, including a short history of the thermionic valve. Construction projects for 14 amps, a preamp, two guitar amps, and a series-regulated push-pull amp for CD players. PCB layouts included for home fabrication. UK Publication. 1995, 251pp., 6¾" x 9¼", softbound, ISBN 0-9057-0539-4. Shipping wt: 2 lbs.

**BKEE36 .....\$36.00**





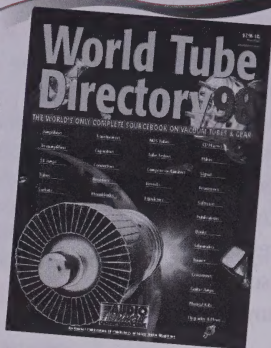
## WORLD TUBE DIRECTORY 1998

Audio Amateur Corporation

Originally published as a supplement to *Glass Audio*, the *World Tube Directory* has grown to be an impressive standalone directory. More than doubled in size, this year's directory is an indispensable resource for anyone interested in the vacuum tube field. The *Directory* is the most complete listing of sources available for vacuum tubes and gear. 1997, 128pp., 8"x10½", softbound. Shipping wt: 2 lb.

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## VALVE & TRANSISTOR AUDIO AMPLIFIERS

By John Linsley Hood

This book describes the milestones which had marked the development of audio amplifiers from the earliest days to the latest systems. Including classic valve amps and new designs using the latest components, the book is a complete guide to audio amp design. 1997, 250pp., 6¼" x9¼", softbound, ISBN 0-7506-3356-5. Shipping wt: 2 lbs.

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## GLASS AUDIO 1990 REPRINT COMING IN 1999!

Find both of the information-packed issues of *Glass Audio* 1990 in this one bound volume. You'll find articles like:

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- ♦ Improving Dyna's FM-3
- ♦ Tubes in Japan
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# THE LOUDSPEAKER DESIGN COOKBOOK

by Vance Dickason

Nineteen years after publication of the first edition and now published in six languages, the latest version of this loudspeaker classic is more popular than ever. Beginning with an explanation of how loudspeakers work, Dickason provides the reader with complete information on building a dream loudspeaker system. The fifth edition adds special chapters on home theater and more advanced, serious car audio accompanied by updated chapters from previous editions. 1995, 165pp., 8½" x11", softbound, ISBN 1-8825-8010-9. Shipping wt: 2 lbs.

**BKAA2-V ..... \$34.95**

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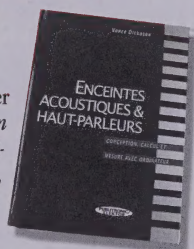
## ENCEINTES ACOUSTIQUE & HAUT-PARLEURS

by Vance Dickason

translated into French by the editors  
of *Elektor Electronics*

The French translation of Dickason's bestseller on loudspeakers, *The Loudspeaker Design Cookbook*. The fifth edition has been faithfully reproduced here in French. 1997, 322pp., 6¾" x9½", hardbound, ISBN 2-86661-073-3. Shipping wt: 2 lbs.

**BKEE31 ..... \$44.95**

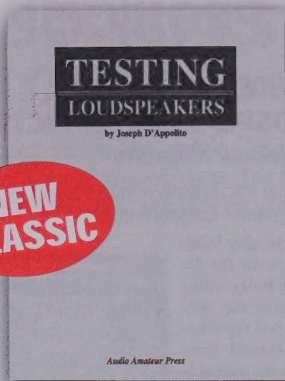


## LOUDSPEAKER DESIGN COOKBOOK II: LOUDSPEAKER RECIPES

by Vance Dickason

The sequel to the loudspeaker classic, *The Loudspeaker Design Cookbook, Recipes* takes advantage of the latest techniques for computer-aided design. Dickason lays a firm groundwork, both theoretical and practical, for successfully building an infinite variety of two-way loudspeaker systems. Instructions are included for designing and building four tested and proven two-way loudspeaker systems. Valuable insight even if you don't use CAD. 1994, 112pp., 8½"x11", softbound, ISBN 1-8825-8004-4. Shipping wt: 1 lb.

**BKAA30 ..... \$19.95**



## TESTING LOUDSPEAKERS

by Joseph D'Appolito

THE authoritative book on the subject of loudspeaker testing. D'Appolito brings his considerable experience and knowledge to the amateur and professional loudspeaker designer. More than simply a "how-to" approach, the book demonstrates the principles involved in loudspeaker testing by specific examples. Culminating in a nontechnical and highly readable explanation of the theories needed to understand the operation of PC-based electrical and acoustical data-acquisition and analysis systems and their benefits and limitations, the book uses examples of measurements made using MLSSA and CLIO to illustrate the text. 1998, 144pp., 8½" x11", softbound, ISBN 1-882580-17-6. Shipping wt: 2 lbs.

**BKAA45 ..... \$34.95**



# PROJECTS!

## **SPEAKER BUILDER'S LOUDSPEAKER PROJECTS #1**

from *Elektuur* magazine

(translated into English and published by  
Audio Amateur Corporation)

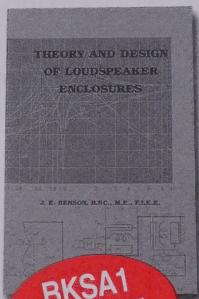
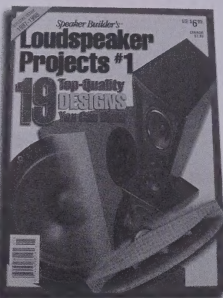
Nineteen speaker building projects for the do-it-yourself audio enthusiast seeking the very best in sound reproduction. Translated from the Dutch and available for the first time in English. Two technical articles deal with a survey of loudspeaker types and the coupling techniques between the loudspeaker and the power amp. All projects include necessary construction details (complete with drawings, figures and photos where applicable), schematic of the crossover and performance data. In short, everything needed to construct the loudspeakers. Drivers specified include some of the world's best-known: Audax, Dynaudio, Focal, Peerless, Scan-Speak, Seas, Vifa, Visaton and others. Superb and reliable guidance to beginner and experienced constructor alike in achieving the very best in reproduced sound. 1997, 100pp., 8" x 10½", saddlestitched. Shipping wt: 1 lb.

**BKAALP1 .....\$6.95**

## **THE THEORY AND DESIGN OF LOUDSPEAKER ENCLOSURES**

by J. Ernest Benson

Dr. Benson originally published his work in three parts in the *Amalgamated Wireless Australia Technical Review* between 1968 and 1972. The collection presents a general theory of loudspeaker enclosure systems. It examines diverse developments in enclosure design and studies the various types of enclosures. It is indeed very technical and is certainly not for beginners. 1993, 244pp., 6"x 9", softbound, ISBN 0-9638-9290-8. Shipping wt: 2 lb.



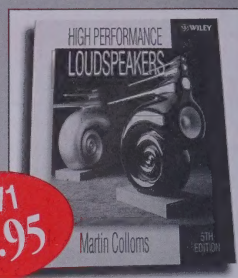
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\$24.95**

## **HIGH PERFORMANCE LOUDSPEAKERS**

by Martin Colloms

Fully revised fifth edition. Martin Colloms gives a unique analysis and review of high performance loudspeaker techniques, which maps the increasing pace of technological change in the industry, driven by new applications, materials and design techniques. Highly detailed technical coverage of every aspect of loudspeaker design,

the new edition includes a new chapter on multimedia and home theater systems, a "Hot Tips" section offering practical advice for real world speaker system design and a unique non-partisan interpretation of manufacturers' technologies and claims. 1997, 420pp., softbound, ISBN 0471-97089-1. Shipping wt: 3 lbs.



**BKW1  
\$54.95**

## **SPEAKER BUILDER 1980 REPRINT COMING IN 1999!**

Out of print for years, we're bringing back the first year of *Speaker Builder* as a softbound book. You'll receive the four issues from 1980 in this single volume! Find articles by some of your favorite authors:

- Paul Stamler on improving "that small, cheap speaker"
- Roger Sanders' electrostatic speaker system
- A three-enclosure loudspeaker system by Siegfried Linkwitz
- Bruce Edgar's corner mid-range horn
- Robert Bullock on Thiele, Small and vented loudspeaker design

Shipping wt: 1 lb.

**BISB80 ..... \$18.00**

## **LOUDSPEAKERS FOR MUSICIANS**

by Vivian Capel

Narrowing the gap between the technician and the musician by relating technical expressions to musical terms, this handbook contains all that a working musician needs to know about loudspeakers—the different types, how they work, and those most suitable for different instruments, for club/cabaret work, and for vocals. Includes tips on constructing cabinets, wiring up, when and where to use wadding/damping (and when not to), finishing, how to ensure they travel well, how to connect multi-speaker arrays, and much more. Ten practical enclosure designs with plans and comments are given in the last chapter, but by the time you've read that far, you should be ready to design your own. UK Publication. 1991, 163pp., 4¾" x 7", softbound, ISBN 0-8593-4242-5. Shipping wt: 1 lb.

**BKEV19 .....\$10.95**



# THE AUDIO ENGINEERING SOCIETY'S LOUDSPEAKER ANTHOLOGIES

From the Audio Engineering Society's Loudspeaker Anthology Series, included are papers written by the greatest transducer experts and inventors on the design, construction and operation of loudspeakers. The latter two volumes continue the work of the series with specific examinations of systems and crossover networks and measurements and evaluation of transducers.

## LOUDSPEAKERS, VOLUME 1:

**RAYMOND E. COOKE, EDITOR**

61 papers, covering the years 1953 to 1977: 1980, 448pp., 8 1/4" x 11 1/4", softbound. Shipping wt: 4 lbs.

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## LOUDSPEAKERS, VOLUME 2:

**RAYMOND E. COOKE, EDITOR**

49 papers from 1978 to 1983. 1984, 464pp., 8 1/4" x 11 1/4", softbound. Shipping wt: 4 lbs.

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## LOUDSPEAKERS, VOLUME 3:

**Systems and Crossover Networks**

**EDITED BY MARK R. GANDER**

42 papers with comments and corrections from 1984 through 1991. An extensive list of related reading is included. 1992, 456pp., 8 1/4" x 11 1/4", softbound. Shipping wt: 4 lbs.

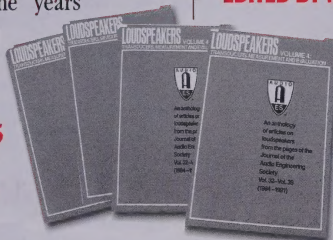
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## LOUDSPEAKERS, VOLUME 4: TRANSDUCERS, MEASUREMENTS AND EVALUATION

**EDITED BY MARK R. GANDER**

38 papers with comments and corrections covering this specific sub-category from 1984 through 1991. A bibliography of related reading lists essential titles in this field. 1992, 496pp., 8 1/4" x 11 1/4", softbound. Shipping wt: 4 lbs.

**BKAS1/4 .....\$37.95**



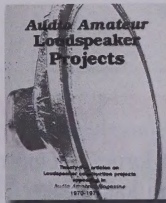
## ELECTROSTATICS

### AUDIO AMATEUR LOUDSPEAKER PROJECTS

from Audio Amateur Magazine

A collection of the 25 best speaker articles published in *The Audio Amateur* throughout the 1970's, this popular book is proof that great designs are never out-of-date, and can be as challenging and rewarding as when they first appeared in print. This volume is a rich source of theory, practice, and design. The electrostatic and transmission-line articles are particularly interesting and useful. Profusely illustrated. 1985, 135pp., 8 1/2" x 11", softbound, ISBN 0-8338-0193-7. Shipping wt: 1 lb.

**BKAA1.....\$20.00**



### THE ELECTROSTATIC LOUDSPEAKER DESIGN COOKBOOK

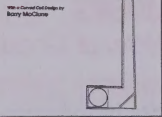
by Roger R. Sanders with Barry McClure

This volume is an encyclopedic exploration of the important issues, trade-offs, and technical questions involved in building the radiating, electrostatically charged panel surfaces which make up the electrostatic loudspeaker. Construction advice for both flat and curved panels is offered, along with plans for the necessary interfaces and drive requirements, and power supply and crossover suggestions. In addition, Sanders provides guidance for building low-frequency systems to supplement the electrostatics for complete frequency coverage. Fully indexed with a thorough, descriptive glossary, parts sources, and a complete bibliography. 1995, 202pp., 8 1/2" x 11", softbound, ISBN 1-8825-8000-1. Shipping wt: 1 lb.

**BKAA20 .....\$34.95**

THE ELECTROSTATIC  
LOUDSPEAKER DESIGN  
COOKBOOK

by ROGER R. SANDERS



### ELECTROSTATIC LOUDSPEAKER DESIGN AND CONSTRUCTION

by Ronald Wagner

Once produced by TAB Books, this classic is now published by Audio Amateur Press. A "how-to" book and an informative text on electrostatics, it provides a step-by-step sequence for building full-range electrostatic speakers, and acquaints the reader with their basic operating principles. Important parameters of an electrostatic speaker and how each one affects performance are addressed. Intended for anyone who is not only interested in this type of speaker, but also wants the very best in sound reproduction. Appendix with construction info, index and bibliography included. 1993, 1987, 243pp., 7" x 9 5/8", softbound, ISBN 0-9624-1916-8. Shipping wt: 1 lb.

**BKAA39 .....\$19.95**





## LOUDSPEAKER AND HEADPHONE HANDBOOK

John Borwick, editor

This classic by an international team of experts meets the need for a comprehensive technical reference book on the theoretical and the practical aspects of loudspeaker and headphone performance, design, and operation in domestic, public, and professional applications. Tables, graphs, and diagrams provide convenient reference material for students and engineers, manufacturing, and applications engineers. Special treatments of electrostatic loudspeakers and headphones. The latest techniques for the computer-aided design of drive units, crossover networks, and enclosures are also described. United Kingdom, 1988, 584pp., 6½" x 9½", hardbound, ISBN 0-2405-1371-1. Shipping wt: 3 lbs.

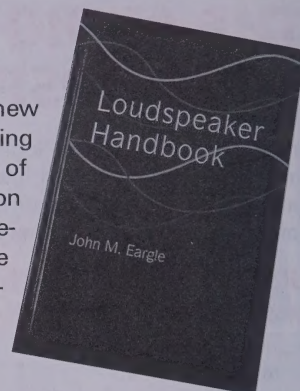
BKBI .....\$64.95

## LOUDSPEAKER HANDBOOK

by John M. Eargle

Outstanding in its depth of coverage, this new text presents a well-balanced treatment covering both the technological and practical aspects of the basic component design and construction of loudspeakers. It reviews rigorous mathematical/graphical explanations concerning the function of loudspeakers and offers insight into modern testing methods. 1997, 325pp., 6¼" x 9¼", hardbound, ISBN 0-412-09721-4. Shipping wt: 2 lbs.

BKIT8 ..... \$71.95



## INTRODUCTION TO LOUDSPEAKER DESIGN

by John L. Murphy

For all hobbyists, students and engineers seeking an overview of the technology of loudspeakers. Beginning with an introduction of the concepts of frequency, pitch and loudness, the author proceeds to develop the idea of a loudspeaker as a system. Topics include design tradeoffs, spatial loading, diffraction loss, cavity effect and enclosure construction. A complete chapter is devoted to crossover design. 1998, 164pp., 5½" x 8¼", softbound, ISBN 0-9663773-2-X. Shipping wt: 1 lb.

BKTA1 .....\$24.95



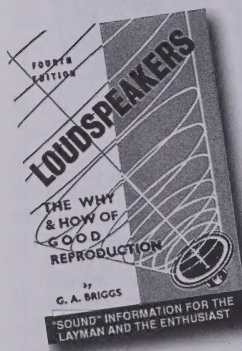
## LOUDSPEAKERS

The Why and How of Good Reproduction

by G. A. Briggs

Easy-to-read, concise introduction to audio basics is something of a classic. Out-of-print for many years (last revised in 1949), the text forms a comprehensive summary of early audio technology with an emphasis on loudspeaker characteristics. Briggs simply and clearly explains impedance, phons and decibels, frequency response, response curves, volume and watts, resonance and vibration, cabinets and baffles, horns, room acoustics, transients, crossovers, negative feedback, transformers, doppler and phase effects, and efficiency. Briggs has a light, breezy style, and a gift for simply explaining difficult concepts. 1990, 1949, 88pp., 5½" x 8½", softbound, ISBN 0-9624-1913-3. Shipping wt: 1 lb.

BKAA5 ..... \$6.95





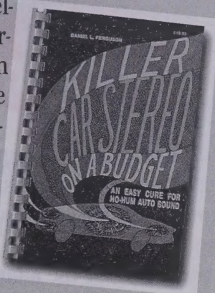
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## KILLER CAR STEREO ON A BUDGET:

An Easy Cure for Ho-Hum Auto Sound

by Daniel L. Ferguson

Provides an excellent, easy-to-understand, hands-on treatment of the cost effective design and installation of high-quality vehicle sound systems. Pretested and auditioned systems for sedans, hatchbacks, and even pickup trucks. Everything you need—photos, step-by-step instructions, mail-order sources—to convert your vehicle's system to that "killer" level of performance. With glossary, resources, index, and many illustrations. 1989, 118pp., 5½" x 8½", spiral-bound, ISBN 0-9624-1910-9. Shipping wt: 1 lb.



**BKAA4 ..... \$3.00**

## ULTIMATE AUTO SOUND:

Your Guide to Heaven on Wheels

by Daniel Ferguson

Improved, upgraded version of *Killer Car Stereo* contains double the material, including updated information on system architecture, cabinet construction, crossovers, and installation, plus a new chapter on vans. 1995, 100pp., 8½" x 11", softbound, ISBN 1-8825-8009-5. Shipping wt: 1 lb.

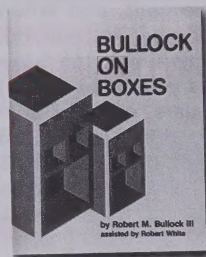


**BKAA37  
\$5.00**

## BULLOCK ON BOXES

by Robert M. Bullock III  
with Robert White

Since 1980, readers of *Speaker Builder* magazine have delighted in the scope and clarity of Mr. Bullock's explanations of vented-box loudspeaker systems. Now collected into a single volume, this is an easy-to-read guide to designing and building vented-box systems based on Thiele/Small models. *Bullock on Boxes* covers a variety of related information drawn from numerous resources. As a professor of mathematics since 1966 and long-time hands-on speaker designer, Dr. Bullock brings a depth of experience to this practical and informational reference. Index, glossary, bibliography, and over 100 illustrations. 1991, 72pp., 8½" x 11", softbound, ISBN 0-9624-1915-X. Shipping wt: 1 lb.



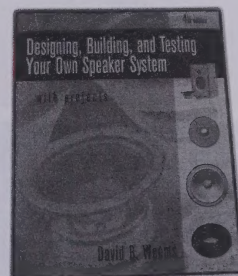
**BKAA8 ..... \$10.95**

## DESIGNING, BUILDING AND TESTING YOUR OWN SPEAKER SYSTEM WITH PROJECTS

by David B. Weems

*Fourth Edition.* The definitive DIY book on designing and testing all kinds of speaker systems is updated for the computer age, covering the latest makes and models and featuring an innovative computer program to assist with speaker design. This version supplies step-by-step details on using the expanded computer program, which can be ordered with an included coupon at a special savings. It also includes new speaker tests, expanded information on crossover networks, techniques for designing double-chamber reflex enclosures and practical rather than theoretical dimension charts. 1997, 223pp., 7¾" x 9¼", softbound, ISBN 0-07-069429-X. Shipping wt: 2 lb.

**BKT12 ..... \$19.95**

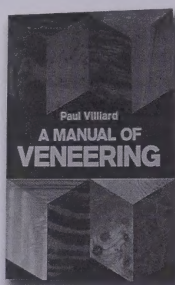




## A MANUAL OF VENEERING

by Paul Villiard

Clear, well-written manual on the craft of veneering which explains how to turn out your own hardwood veneers beautifully and economically. All the techniques of veneering are shown: how to glue, clamp, tape, and edge veneered panels; how to veneer curved panels; and how to inlay, finish, and repair veneers. Sixty-five photographs and drawings amplify the text, and 16 different veneered woods are shown in full color on the cover. Veneering is an ancient and honorable craft, and when you select the wood yourself and do your own construction, you can be sure that the veneers you make will retain their beauty for years, even for generations. Index. 1975, 1968, 174pp., 5 $\frac{3}{8}$ " x 8 $\frac{1}{2}$ ", softbound, ISBN 0-486-23217-4. Shipping wt: 1 lb.



**BKD4.....\$6.95**

## THE LOUDSPEAKER INDUSTRY SOURCEBOOK 1998

Audio Amateur  
Corporation

Use it to find manufacturers of the materials you need in producing loudspeakers. From adhesives to magnets to electronic components. You'll find this book to be the most comprehensive collection of listings on loudspeaker materials ever assembled. Brought to you by the publishers of *Voice Coil*, the periodical for the loudspeaker industry, the *Loudspeaker Industry Sourcebook* delivers all of your industry needs. Concise format and easy look-ups. This business-to-business directory is sure to be sought after by every loudspeaker manufacturing company worldwide! 1998, 168pp., 8" x 10 $\frac{1}{2}$ ", softbound. Shipping wt: 1 lb.



**ANNUAL  
DIRECTORY**

**KAALIS8 .....\$34.95**

## SPEAKER BUILDER

1989 Reprint

One of the most popular years of *Speaker Builder*, the 1989 series featured six project-packed issues. In one bound volume, you'll get:

- ♦ A Passively Assisted Woofer System
- ♦ An Easy IC Power Amp/Crossover
- ♦ A Thunderbird Isobarik
- ♦ Building a Subwoofer/Satellite System
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- ♦ The Microline
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## AUDIO AMATEUR POWER AMP PROJECTS

from *Audio Amateur* magazine

Profusely illustrated handbook features 26 of the best articles on power amps published in the *Audio Amateur* from 1970-89. Authors from six countries offer an array of designs to provide almost any level of high-quality audio power needed by the resourceful amateur who prefers the pleasure of building his or her own equipment. Predominantly solid state. 1996, 205pp., 8½" x 11", softbound, ISBN 1-8825-8008-7. Shipping wt: 1 lb.

**BKAA40 .....\$19.95**

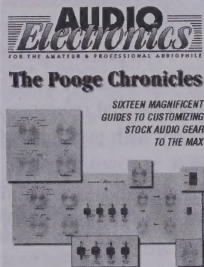


## THE POOGE CHRONICLES FIRST EDITION

from *Audio Amateur* Magazine

This collection of nine articles from the pages of *Audio Amateur* addresses the best in modification of stock audio equipment. POOGE is the acronym for Progressive Optimization Of Generic Equipment and these articles should provide you with a clear understanding of what matters in taking any piece of audio equipment from its stock condition to something nearer its full capabilities. 1997, 103pp., 8½" x 11", softbound, ISBN 1-882580-14-1. Shipping wt: 1 lb.

**BKAA25 .....\$16.95**

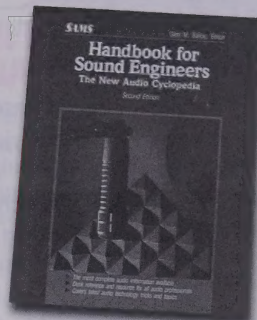


## HANDBOOK FOR SOUND ENGINEERS: THE NEW AUDIO CYCLOPEDIA

Glen M. Ballou, editor-in-chief

By any measure, this book is the standard reference for sound and acoustical technology. Updated to include the latest technological advancements such as MIDI, cinema sound, transformers, and compact discs, this second edition is a comprehensive work that offers the amateur and professional alike years of information and technology in a single authoritative resource. The book also details sound system design and proper installation techniques for just about any application. 1991, 1987, 1,400pp., 7¾" x 9¼", hardbound, ISBN 0-6722-2752-5. Shipping wt: 6 lbs.

**BKS28.....\$99.95**



Books  
GENERAL AUDIO



## BUILD YOUR OWN HIGH-END AUDIO EQUIPMENT

from *Elektr Electronics Magazine*

Solid state. Projects include three preamps; four amps; three headphone amps; Dolby surround; surround sound processor; active three-way speaker; active crossover; active mini subwoofer; audio system phase check; over-view of PC-controlled audio measurement system. PCB layouts included. UK Publication. 1995, 261pp., 6¾" x 9¼", softbound, ISBN 0-9057-0540-8. Shipping wt: 2 lbs.

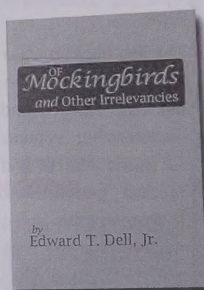
**BKEE38 ..... \$36.00**

## OF MOCKINGBIRDS AND OTHER IRRELEVANCIES

by Edward T. Dell, Jr.

Since its inception in 1970, *Audio Amateur* magazine has featured an editorial by its publisher/editor. Mr. Dell's commentaries on audio, the passing scene, and technical and ethical issues have been collected into this stimulating volume. Contentious, prophetic, philosophical, and entertaining, these essays are one man's views on a potpourri of subjects. A fun gift for the audiophile who thinks he has everything. 1993, 100pp., 5¾" x 8", hardbound, ISBN 0-8338-0208-9. Shipping wt: 1 lb.

**BKAA9 .....\$9.95**





**DIGITAL AUDIO**

## **AN INTRODUCTION TO DIGITAL AUDIO**

by John Watkinson

Written in a clear and concise manner, this book is essential reading for newcomers to digital audio. All of the key technologies are presented: oversampling, noise shaping and error correction theories are treated in a simple but accurate form. DAT, DASH, DCC, CD and Mini-Disc recorders are described along with the growing technique of audio editing on hard disks. 1994, 256pp., 6 1/8" x 9 1/4", softbound, ISBN 0-240-51378-9. Shipping wt: 2 lbs.

**BKB46 ..... \$39.95**

### **SOUND REINFORCEMENT HANDBOOK**

written for Yamaha by Gary Davis and Ralph Jones

The first book to cover all aspects of designing and using sound reinforcement systems for public address and musical performance. It features the audio theory involved, as well as practical applications, and covers everything from microphones to loudspeakers. The second edition contains 40 additional pages, index, new material on MIDI and synchronization; and a new appendix on logarithms. 1989, 1987, 418pp., 8 1/2" x 11", softbound, ISBN 0-8818-8900-8. Shipping wt: 3 lbs.

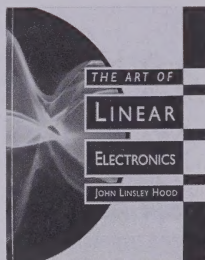
**BKHL1 ..... \$34.95**

### **ART OF LINEAR ELECTRONICS**

by John Linsley Hood

Linear electronics deals with the handling of real-life signals of variable size, shape and frequency, such as those found in audio amplifiers and radio receivers. This handbook covers the principal aspects of the subject in a way that will not only introduce readers to the basics of linear circuit design but will also allow them to begin to do some design themselves. A hands-on approach to the how, what and why of the components and circuitry used in this field. The open approach offers an entry to the world of real-life analogue electronics. Guidance on practical matters provides helpful advice for the more skilled electronics engineer. UK Publication. 1994, 1993, 344pp., 7 3/8" x 9 5/8", ISBN 0-7506-0868-4. Shipping wt: 2 lbs.

**BKB41 ..... \$32.95**



### **PRINCIPLES OF DIGITAL AUDIO**

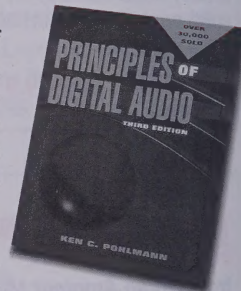
by Ken C. Pohlmann

Widely acknowledged as the "bible" of digital audio for both professional designers and engineering students, this book has been updated and expanded to introduce both audio and computer users to the myriad new technologies that are now transforming the field.

- Covers advances in:**
  - \*Optical disc reading
  - \*Interfacing and networking
  - \*Perceptual coding theory and applications
  - \*Digital audio broadcasting

This essential reference combines digital audio theory with examples of applications and provides a comprehensive database of valuable digital audio information. 1995, 622pp., 7 3/8" x 9 1/8", softbound, ISBN 0-0705-0469-5. Shipping wt: 3 lbs.

**BKMH26 ..... \$44.95**



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## AUDIO AND HI-FI HANDBOOK

by Ian Sinclair

This second edition provides a wide perspective on high-quality sound reproduction, including reproduction under adverse circumstances, from less conventional sources and with regard to the whole technology from studio to ear. 1995, 1989, 656pp., 6 1/8" x 9 1/4", softbound, ISBN 0-7506-2489-2. Shipping wt: 4 lbs.

**BKB47 .....\$49.95**

## PRACTICAL RECORDING TECHNIQUES

by Bruce Bartlett

A step-by-step approach to professional audio recording for novices and hobbyists, it is an ideal guide to making impressive recordings. Discusses recording in the home, studio, or on location and provides current information on MIDI, SMPTE, digital audio, and audio for video. 1992, 544pp., 7 3/8" x 9 1/4", softbound, ISBN 0-672-30265-9. Shipping wt: 2 lbs.

**BKB48 .....\$27.95**

## THE COMPLETE GUIDE TO HIGH-END AUDIO

by Robert Harley

Written for beginners and experienced listeners alike, this is the first book that tells you everything you need to know about buying and enjoying high-quality hi-fi. In thirteen easy-to-read and fact-filled chapters, the author shares secrets on how to get the maximum enjoyment out of audio. From nuts and bolts tips on hi-fi equipment to suggestions on becoming a better listener, you'll find out how to get high-end sound at low prices and learn how to read equipment reviews and determine why the components that sounded so good in the showroom don't sound so good at home. Best of all, learn how to keep hi-fi fun! 1994, 450pp., 7"x10", softbound, ISBN 0-9640-8490-2. Shipping wt: 3 lbs.

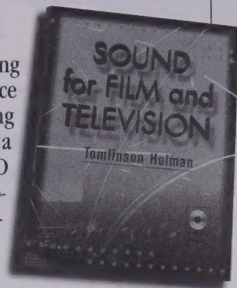
**BKAP1 .....\$29.95**

## SOUND FOR FILM AND TELEVISION

by Tomlinson Holman

In this overall introduction to the field of recording, editing and mixing audio for film and television programs, a balance is struck between aesthetic and technical content, combining theory and practice, to approach sound as both an art and a science, as no other text has before. Accompanying audio CD contains examples demonstrating key concepts. 140 photographs and illustrations. 1997, 368pp., 8 1/2" x 11", softbound with CD, ISBN 0-240-80291-8. Shipping wt: 2 lbs.

**BKB49 .....\$39.95**



## COMPACT DISC PLAYER MAINTENANCE AND REPAIR

by Gordon McComb & John Cook

Complete with a preventive maintenance schedule you can follow, this well-illustrated guide walks the reader through the steps involved in taking apart, cleaning, and lubricating a CD player. And if problems do occur, the troubleshooting techniques in this book provide easy relief. The book also includes background information on the theory and operation of CD players, what criteria you should use when shopping for one, a list of major manufacturers, a "similar model" cross reference table for troubleshooting, and a handy glossary. 1987, 245pp., 7 1/2" x 9 1/2", softbound, ISBN 0-8306-2709-1. Shipping wt: 1 lb.

**BKT16 .....\$17.95**

## HOME THEATER

## BUILD YOUR OWN HOME THEATER

by Robert Wolenik

The questions you always wanted to ask and those you haven't thought to ask about home theater are answered in this book. You'll learn how to turn an ordinary system into something extraordinary or how to build a new system from the ground up. Find out what goes into a home theater system, where to put your system, what the different surround standards sound like and how you can maximize your audio. 1993, 200pp., 7 3/8" x 9 3/8", softbound, ISBN 0-7506-9942-6. Shipping wt: 1 lb.

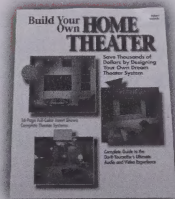
**BKS47 .....\$19.95**

## HOME THEATER FOR EVERYONE

by Robert Harley

This is the first book that tells everything you need to know about buying and enjoying today's home entertainment systems. Written for beginners and home theater enthusiasts alike, the book includes nine fact-filled chapters—covering everything from the basics to technical matters. Learn about high-performance home theater on a budget, why all "100 watt" receivers don't sound alike and how to make your speakers sound up to 50% better in 10 minutes—at no cost to you. 1997, 208pp., 7" x 10", softbound, ISBN 0-9640-849-2-9. Shipping wt: 1 lb.

**BKAP3 .....\$19.95**



## HOME THEATER



## AUDIO ANTHOLOGY SERIES

## WHEN AUDIO WAS YOUNG

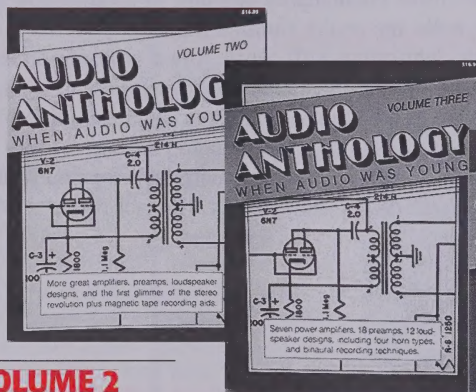
C. G. McProud, editor

This series presents articles from *Audio Engineering* magazine which detail the history of audio from the first audio amplifiers, speakers, etc., through the advent of the transistor and early work in stereo reproduction. Almost all the articles are designed with the constructor in mind.

## VOLUME 1

38 of the best articles from 1947-1950. Heavily illustrated. 1987, 1950, 124pp., 8½" x11" softbound, ISBN 0-8338-0195-3. Shipping wt: 1 lb.

BKAA3/1 .....\$16.95



## VOLUME 2

From 1950-1952, 45 articles featuring magnetic tape recording aids, more great amp, preamp, and loudspeaker designs, as well as a first glimpse at the beginning of the stereo revolution. Heavily illustrated. 1989, 1952, 124pp., 8½" x11", softbound, ISBN 0-8338-0197-X. Shipping wt: 1 lb.

BKAA3/2 .....\$16.95

## VOLUME 3

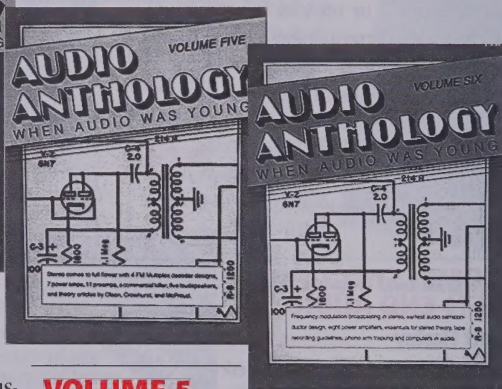
43 articles from 1952-1955 featuring a discussion of binaural recording techniques, and designs for seven power amps, 18 preamps, and 12 loudspeakers, including four horn types. Heavily illustrated. 1990, 1955, 124pp., 8½" x11", softbound, ISBN 0-9624-1911-7. Shipping wt: 1 lb.

BKAA3/3 .....\$16.95

## VOLUME 4

34 articles from 1955-1957 comprise this fourth volume offering practical advice for the do-it-yourself audiophile. Solid state techniques and circuits are introduced here, along with designs for 12 amps and preamps, and six loudspeakers. Heavily illustrated. 1991, 1958, 144pp., 8½" x11", softbound, ISBN 0-9624-1919-2. Shipping wt: 1 lb.

BKAA3/4 .....\$16.95



## VOLUME 5

48 articles from 1958-59 feature the shift from monophonic to stereo reproduction. 1993, 1959, 144pp., 8½" x11", softbound, ISBN 1-8825-8001-X. Shipping wt: 1 lb.

BKAA3/5 .....\$16.95

## VOLUME 6

38 articles published in 1960-61. 1994, 1962, 144pp., 8½" x11", softbound, ISBN 1-8825-8006-0. Shipping wt: 1 lb.

BKAA3/6 .....\$16.95





## ACTIVE FILTER COOKBOOK

by Don Lancaster

A catalog of predesigned filters for those who need them but don't have the time to design them. In addition to encouraging users to adapt these designs for specific needs, the book also teaches how to construct high-pass, low-pass, and band-pass filters using Bessel, Chebyshev, or Butterworth response. 1975, 240pp., 5½" x 8½", softbound, ISBN 1-882193-31-8. Shipping wt: 1 lb.

BKS14 .....\$28.95



## AUDIO POWER AMPLIFIER DESIGN HANDBOOK

by Douglas Self

A uniquely detailed and practical manual for the design of audio power amplifiers. Based on a lifetime of design experience and the results of experimental data, not subjective appraisal, this book provides a complete reference for professional audio designers and engineers. 1996, 256pp., 100 line illustrations, 6½" x 9¼", softbound, ISBN 0-7506-2788-3. Shipping wt: 2 lbs.

BKB43 .....\$37.95

## HIGH POWER AUDIO AMPLIFIER CONSTRUCTION

by R.A. Penfold

Background information on high power audio amplifiers, together with some practical designs capable of output powers of up to around 300-400W RMS. Included are types having power MOSFETs in the output stage, which give excellent performance over the full audio range and offer good reliability in what are relatively simple circuits. Printed circuit designs are included for these MOSFET circuits, as are suitable power supply designs. United Kingdom. 1991, 76pp., 4¾" x 7", softbound, ISBN 0-8593-4222-0. Shipping wt: 1 lb.

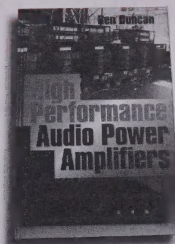
BKEV18 .....\$10.95

## HIGH PERFORMANCE AUDIO POWER AMPLIFIERS

by Ben Duncan

*Revised edition.* Power amplifiers and their performance lie in the heart of audio engineering. This handbook is the distillation of the state of the art. Linking analog electronics, acoustics, heat and music technology; high-end hi-fi and professional PA and recording studio use; theory, modelling and real-world practice; design and repair; the old and the new; the mainstream and the specialized; this comprehensive guide to power amps is a core reference for anyone in the industry, as well as any interested onlookers. 1997, 1996, 463pp., 6¼" x 9½", hardbound, ISBN 0-7506-2629-1. Shipping wt: 2 lbs.

BKB44 .....\$62.95



## THE AUDIO GLOSSARY

by J. Gordon Holt

Authored by the founder of *Stereophile* magazine, this handy reference is a comprehensive overview of over 1,900 technical and subjective audio terms defined in precise, and sometimes, humorous fashion. At last, here is the key that demystifies audio terminology making it easier for the average person to understand. Holt developed subjective testing, and devised most of the language that is now used worldwide to describe reproduced sound. Foreword by Peter Mitchell. 1990, 152pp., 5¼" x 7½", softbound, ISBN 0-9624-1914-1. Shipping wt: 1 lb.

BKAA7/S.....\$9.95

J. GORDON HOLT

## THE AUDIO GLOSSARY



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## MUSIC, THE BRAIN AND ECSTASY

by Robert Jourdain

In clear, accessible language, Robert Jourdain writes about the extraordinary array of physical and mental functions involved in the appreciation of music. Stretching the mind in every dimension that music occupies, the author encourages one to think like a paleontologist, a neurophysiologist, an acoustician, a psychophysicist, a musicologist, a composer, a performer, a sociologist, a linguist, and a philosopher. The book looks at the evolution of music, and introduces surprising new concepts of memory and perception, knowledge and attention, motion and emotion, all at work as music takes hold. 1997, 377pp., 5 $\frac{7}{8}$ " x 8 $\frac{1}{2}$ ", hardbound, ISBN 0-688-14236-2. Shipping wt: 2 lbs.

**BKWM1 .....\$25.00**

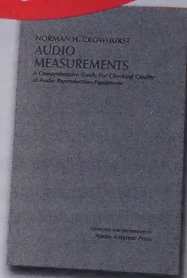
## AUDIO MEASUREMENTS

by Norman Crowhurst

Famous compendium of measurement and test techniques for audio reproduction equipment of the tube era includes discussion of all instruments needed. Covers amps, transformers, preamps, turntables, changers, tonearms, cartridges, tape recorders. 1996, 1985, 224pp., 5 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ ", softbound, ISBN 1-8825-8012-5. Shipping wt: 1 lb.

**BKAA41.....\$12.95**

**COMPREHENSIVE GUIDE!**



## COMPLETE GUIDE TO AUDIO

by John J. Adams

Written for the consumer who wants to know more about sound and sound systems, this book provides comprehensive, simple explanations to your questions about audio systems. Designed to help you make successful purchasing decisions and demystify the jungle of wires and connections of your audio system. Especially for those who want a clear and simple explanation of their sound and home theater system. 1998, 163pp., 7 $\frac{3}{8}$ " x 9 $\frac{1}{4}$ ", softbound, ISBN 0-7906-1128-7. Shipping wt: 2 lbs.

**BKS59 \$29.95**

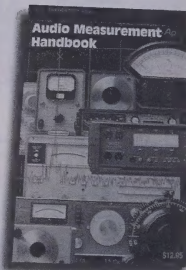
**NEW**

## AUDIO MEASUREMENT HANDBOOK

by Bob Metzler, Audio Precision, Inc.

This book is intended as practical, hands-on assistance for workers in all phases of the audio field. Beginning with descriptions of basic tools and techniques and guides to selecting the appropriate audio test instruments, the book applies these techniques to commonly-used types of audio equipment and describes the typical ranges of performance to be expected. A glossary of specific audio terminology and major specifications used in the audio measurement field completes the book. 1993, 178pp., 5 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ ", softbound. Shipping wt: 1 lb.

**BKAP2 .....\$12.95**

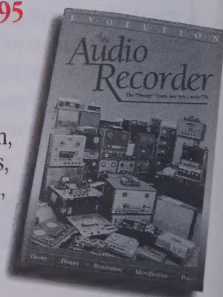


## EVOLUTION OF THE AUDIO RECORDER

by Phil Van Praag

Finally, a comprehensive guide to the audio recorder—explaining its mysteries, tracing its evolution, providing tips on restoration, buying, identification and pricing. Over 500 photos and illustrations, covering over 125 brand names. The only book of its kind. 1997, 518pp., 5 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ ", softbound, ISBN 0-9657344-0-4. Shipping wt: 2 lbs.

**BKEC1 .....\$39.95**



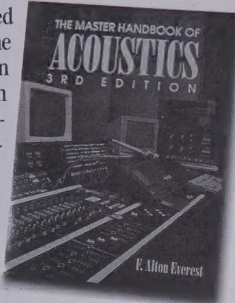


## THE MASTER HANDBOOK OF ACOUSTICS

by F. Alton Everest

Revised and enlarged third edition of the classic sourcebook on acoustics offers even more complete, up-to-date, usable information than before. Everything from the basics of sound to the latest technological advances, including frequency, wavelength, octaves, harmonics, the sound spectrum, diffraction grating diffusers, digital reverb systems, white and pink noise, balancing loudspeakers, digital recording systems, multitrack recording, setting up your home listening room, room testing, live-end and dead-end techniques for listening rooms, simple sinusoid and complex waves, and setting up the control room of a sound studio—all with examples, experiments, and calculations. 1994, 452pp., 7½" x 9½", softbound, ISBN 0-8306-9396-3. Shipping wt: 2 lbs.

**BKT13 .....\$24.95**

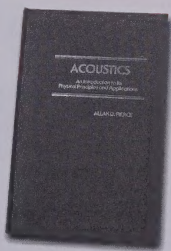


## ACOUSTICS—AN INTRODUCTION TO ITS PHYSICAL PRINCIPLES AND APPLICATIONS

by Allan D. Pierce

Introduces the physical principles and theoretical basis of acoustics, concentrating on those concepts and points of view that have proven useful in applications and phenomena such as noise control, underwater sound, architectural acoustics, audio engineering, nondestructive testing, remote sensing, and medical ultrasonics. The text is supplemented by problems and their answers. 1989, 1981, 678pp., 6¼" x 9½", hardbound, ISBN 0-88318-612-8. Shipping wt: 3 lbs.

**BKAC2 .....\$52.95**

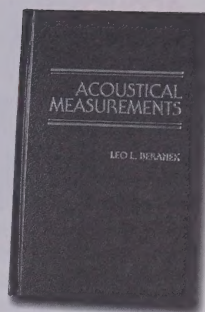


## ACOUSTICAL MEASUREMENTS

by Leo L. Beranek

A completely revised edition of the famous text, with more than half the pages and chapters revised or completely rewritten to cover new developments in acoustical instruments and measurement procedures, including sound and vibration meters, intensity meters, spectrum analyzers, recorders, computers, and noise measurement devices. 1989, 1948, 5¾" x 8¾", hardbound. Shipping wt: 3 lbs.

**BKAC1 .....\$61.95**



## ACOUSTICS AND PSYCHOACOUSTICS

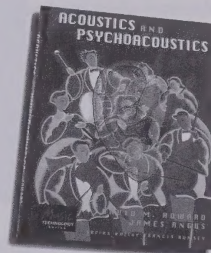
by David Howard and James Angus

A comprehensive book designed to provide a broad-ranging introduction to the subject of acoustics, including the principles of human perception of sound, sometimes called psychoacoustics. Topics included are:

- Principles of sound
- Human hearing and psychoacoustics
- Principles of musical acoustics
- Musical timbre, pitch and loudness perception
- Sound generation in musical instruments
- Sound in different environments (architectural acoustics)
- Processing sound electronically

1996, 224pp., 7½" x 9¾", softbound, ISBN 0-240-51428-9. Shipping wt: 3 lbs.

**BKB45 .....\$32.95**



## ACOUSTIC FEEDBACK—HOW TO AVOID IT

by Vivian Capel

Focusing on reducing feedback, the book concentrates on simple and practical ways to improve acoustics. In addition to electronic aids such as equalizers, frequency shifters, and notch filters are discussed. Special requirements of live group concerts are also considered as well as the related instability problems sometimes associated with large setups. Some unsuccessful attempts at curing feedback are even explored, in order to save readers wasted time and effort in duplicating them. Design, layout and operation of a highly successful twin notch filter is also included in this handy overview. 1991, 92pp., UK Publication, 4¾" x 7", softbound, ISBN 0-85934-255-7. Shipping wt: 1 lb.

**BKEV20 .....\$10.95**

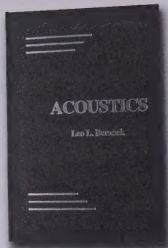


## ACOUSTICS

by Leo L. Beranek

An indispensable source of practical acoustical concept and theory for engineers, scientists, and consultants, with new information on microphones, loudspeakers and speaker enclosures, room acoustics, and acoustical applications of electro-mechanical circuit theory. 1966, 1954, 491pp., 6" x 9", hardbound, ISBN 0-8831-8612-8. Shipping wt: 3 lbs.

**BKAC5 .....\$44.95**

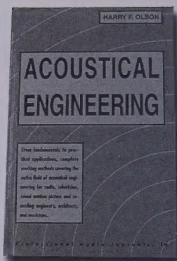


## ACOUSTICAL ENGINEERING

by Harry F. Olson

This handsome edition by Professional Audio Journals is a reprint of one of the great audio classics of all time. From fundamentals to practical applications, it presents complete working methods encompassing the entire field of acoustical engineering. Spanning 16 chapters, the text covers basic acoustics, sound, and vibrating systems, before moving on to chapters on dynamical analogies and acoustical elements. An invaluable reference and guide for all audio professionals, presented clearly enough for even the amateur to understand. Acid-free paper, 567 illustrations; introduction by Jesse Klapholz, former executive editor of the *Journal of the Audio Engineering Society*. Includes a biography of Olson and a bibliography of selected articles. 1991, 736pp., 6" x 9", hardbound. Shipping wt: 3 lbs.

**BKPA1 .....\$62.95**

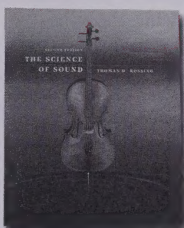


## THE SCIENCE OF SOUND

by Thomas D. Rossing

This beautiful second edition builds upon its predecessor's reputation as the most authoritative textbook on acoustics and musical acoustics. After thoroughly covering these basic principles, the author comprehensively explains a number of more advanced topics, including the perception and measurement of sound, the human voice, and environmental noise. Over 550 figures; references, glossary, questions, exercises at the end of each chapter. 1990, 1981, 686pp., 7 3/4" x 9 1/2", hardbound, ISBN 0-2011-5727-6. Shipping wt: 3 lbs.

**BKAW1 .....\$59.95**



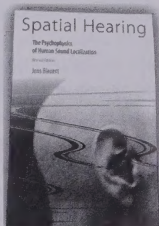
## SPATIAL HEARING

The Psychophysics of Human Sound Localization

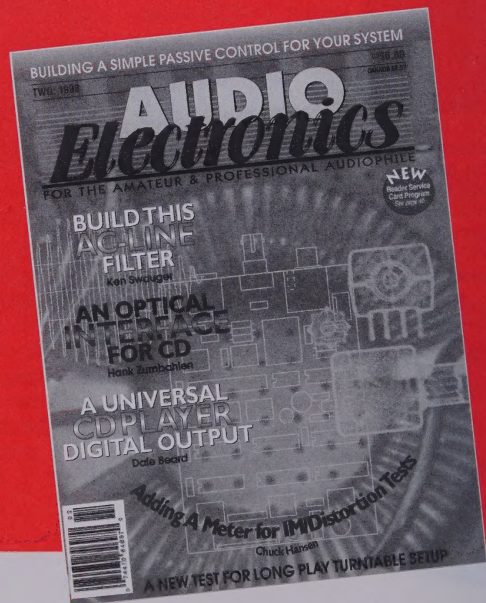
by Jens Blauert

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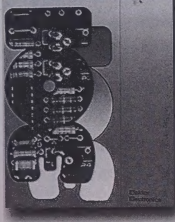




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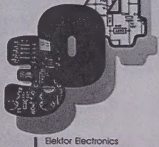


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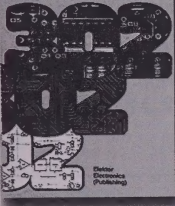


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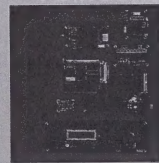


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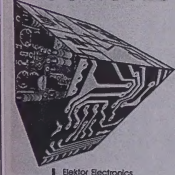


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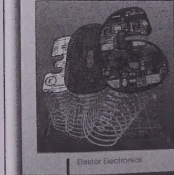


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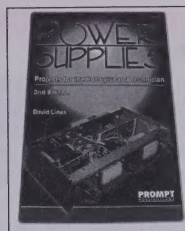
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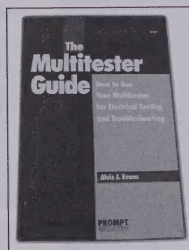


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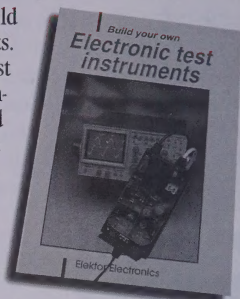
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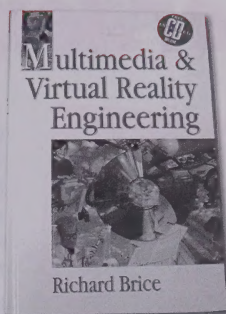
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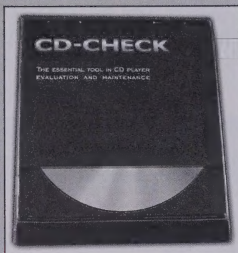
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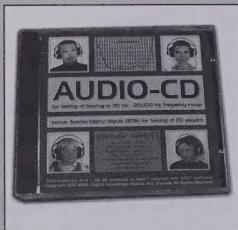
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**CDIII ..... \$30.00**





## PROSONUS STUDIO REFERENCE CD

Developed especially to allow high-quality test and evaluation procedures to be made easily and quickly. Contains 62 bands of test signals. Some bands also contain individually addressable Index Points, so that families of test signals can be accessed individually by keying in the appropriate track and index numbers on your CD player or its RC unit. This feature also allows you to play tracks in any order or to repeat tracks. Includes L/R test, piano chord, 88-note piano scale, loudspeaker polarity test, sine waves at each octave center, pink and white noise, impulse clicks, and more. Shipping wt: 1 lb.

**CDSA1 ..... \$69.95**



## MIX REFERENCE DISC™

### Deluxe Edition

This expanded collection of audio test signals is a versatile professional toolkit for any pro audio or multimedia application. Audio tracks include: alignment tones, frequency sweeps, 1/3 octave EQ bands, pink noise, sine/square/triangle waves, A-440 tuning reference, SMPTE time code, and guitar tuning notes. The multimedia tracks include L/R channel ID's and audio clips in .WAV and .AIF formats at various sampling/bit rates. 1996. Shipping wt: 1 lb.

**CDMX1 ..... \$39.95**

## "MY DISC" – THE SHEFFIELD/A2TB TEST DISC

More than a test CD, this disc was engineered for a thorough evaluation of not only your component's performance, but the listening environment, and your personal critical listening ability as well. Music selections cover a broad spectrum of styles and the test selections cover a wide range of system design and performance evaluations. Extensive notes are included. Shipping wt: 1 lb.

**CDSH3 ..... \$29.95**

## STEREOPHILE TEST CD 3

Contains 27 tracks including music, signals for testing loudspeakers and rooms, signals for testing electronic components, amplifiers and CD players. Shipping wt: 1 lb.

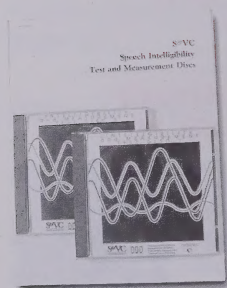
**CDSTPH3 ..... \$9.95**

## INTELLIGIBILITY – MEASUREMENT TEST DISC

2 CD-set w/booklet. 32 tracks including male and female voices, white noise, percussion sounds, 88-note piano scale, and polarity check. These discs are tools to aid the sound engineer in the evaluation of sound reinforcement systems which must project English speech with a highly accurate reception by listeners. Through the use of modified rhyme tests and both male and female speakers, they give the user a repeatable, transportable, standard comparison of speech intelligibility for use

anywhere needed. Other test stimuli are also included, and the package also contains printed copies of the tests for copying and distribution to the listener groups. Shipping wt: 1 lb.

**CDSA2..... \$145.00**





# CLIOLITE ELECTROACOUSTIC MEASUREMENT SYSTEM

by: Audiomatica



**Demo Software Only**  
SOF-CLIODEM \$5.00

From the makers of CLIO, the professional loudspeaker electroacoustic measurement system, CLIOLite is the entry-level version of the software at an unbelievable price! With the CLIOLite system, you get the 4.0 version of the CLIOLite software and the HR-2000 PC Board. By special arrangement, the North American package includes our Mitey Mike II calibrated microphone capsule and wand (sold separately as **KD-4MCA** on page 34), making this the most impressive, inexpensive measurement package available to the loudspeaker designer and tester.

**NOTE:** These products available in North America and selected other countries only. Call for availability in your area. Prior sales of MM II excluded from this special pricing. HR-2000 PC Board not available separately.

**CLIOLite includes many of the important features of the professional CLIO including:**

- ✦ Programmable signal generator
- ✦ AC V RMS, dBU, dBV, dB SPL meter
- ✦ C & L meter (real time)
- ✦ Dual channel oscilloscope
- ✦ Sinusoidal frequency response
- ✦ Sinusoidal impedance (CV, CI, Int)
- ✦ MSE Thiele/Small parameters
- ✦ Distortion vs. frequency (2nd, 3rd)
- ✦ True MLS analysis
- ✦ Impulse response
- ✦ Energy time curve (ETC)
- ✦ RTA 1/3 octave analysis
- ✦ Help on-line

System requirements—386 DX33+; 2 Mb RAM, hard disk, DOS 3.2+. (User manual requires Windows 3.1+ or Windows 95 to run the Adobe Acrobat reader software.) Shipping wt: 4 lbs.

**KC-CLIO .....\$599.00**

For those who already own a suitable test microphone, the CLIOLite software and HR-2000 PC board may also be purchased without the microphone. Shipping wt: 3 lbs.

**KC-CLIO .....\$489.00**

## DIGITAL ERROR DETECTOR

### Digital Recordings

**DED™** is a sophisticated electronic device which for the first time allows continuous monitoring of the digital output signal from CD/DVD players, DAT recorders and many other digital media. Digital errors, displayed on the front panel of the device, are the result of data loss and lead to faulty sound reproduction. This leads to poor stereo imaging, lack of clarity, transient-response and dynamic range distortion and even, in extreme cases, audible clicks and muting. The **DED™** will show you how to improve, protect and maintain the performance of your equipment and will help to perform monitoring and preventive maintenance.

**DED™** can be used by recording studios, radio stations, sound archivers, duplication centers, sound research centers, theaters, concert halls and by audiophiles who are concerned about quality and faithful reproduction of music and sound. Made to professional and audiophile standards, **DED™** provides digital inputs—optical and coaxial. The front panel has three diodes to indicate power, link and data errors. Shipping wt: 4lbs.

**KR-1 .....\$199.95**

## DIGITAL SOUND LEVEL METER

### TES Corp.

Featuring

- ± 2dB accuracy
- 0.1dB resolution
- A & C weighting
- High & Low measuring ranges

Low (35 to 100dB)

High (65 to 130dB)

- Fast/slow response
- Maximum hold function with reset button
- Built-in calibration check (94dB)
- Tripod mount and analog DC/AC conditioned outputs of 10mV/dB
- Large 0.5" 3½" digit LCD display

Shipping wt: 2lbs.

**KTS-1 .....\$259.00**

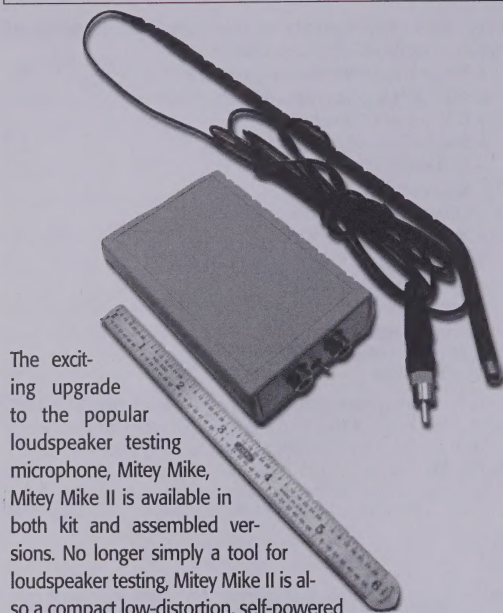


AUDIO TESTING & MEASUREMENT



# MITEY MIKE II MICROPHONE PREAMP, CAPSULE AND WAND SYSTEM

Dick Campbell & Joe D'Appolito



The exciting upgrade to the popular loudspeaker testing microphone, Mitey Mike, Mitey Mike II is available in both kit and assembled versions. No longer simply a tool for loudspeaker testing, Mitey Mike II is also a compact low-distortion, self-powered microphone suitable for performance, recording and sound reinforcement applications. Mitey Mike II presents several advantages over its predecessor. Using surface mount technology (SMT) and improved PC construction techniques, Mitey Mike II is much smaller (the electronics package occupies 9 cu in. compared to 20 cu in. for the previous model), uses less power (total draw has been reduced from 500-550 $\mu$ A to 200-250 $\mu$ A) and the new output buffer op amp has lower distortion, wider bandwidth and higher slew rate than the model used in the previous Mitey Mike.

In addition to these advantages, the Mitey Mike II product line includes a new modification of the Panasonic microphone capsule used with the microphone preamp. This capsule is modified to dramatically reduce distortion at the drain connection.

## One Channel Unassembled Microphone Preamp Kit

**Includes:** 1 Motherboard, 1 SMT-assembled mike preamp board, mounting pins, box with 2-jack front plate, switch, battery leads, foam padding, 2 RCA jacks, PC-mount gold pin receptacles. Shipping wt: 1 lb.

**KD-4** ..... \$119.00

## Second Channel Upgrade Kit for Microphone Preamp

**Includes:** 1 additional SMT-assembled mike preamp board, additional PC-mount gold pin receptacles, 2 RCA jacks, PC-mount gold pin receptacles. Shipping wt: 1 lb.

**KD-42B** ..... \$89.95

## Assembled Two-Channel Microphone Preamp

**Includes:** Assembled KD-4 plus KD-42B (using replacement 4-jack front plate).

**KD-42BA** ..... \$249.95

## Assembled Single Channel Microphone Preamp

**Includes:** Assembled KD-4.

**KD-4A** ..... \$159.00

## Assembled Microphone & Wand—Calibrated

**Includes:** Modified microphone capsule and wand—assembled and calibrated.

**KD-4MCA** ..... \$149.00

## Assembled Microphone & Wand—Uncalibrated

**Includes:** Modified microphone capsule and wand—assembled and uncalibrated.

**KD-4MUA** ..... \$119.00

## Windscreen for Mitey Mike II Microphone

**KD-4W** ..... \$4.25

## Clip for Mitey Mike II Microphone

**KD-4C** ..... \$3.00

## 94/114dB SOUND LEVEL CALIBRATOR

TES Corp.

**Microphone calibrator performs 1kHz calibration. Features:**

- ◆ Two calibration levels, 94 and 114dB
- ◆ Maintain sound level meter and dosimeter accuracy in the field

- ◆ Perform "before & after" calibration checks as recommended by standards
- ◆ Fits 1" and 1/2" microphones

### SPECIFICATIONS:

- ◆ Output sound pressure levels—94dB or 114dB under reference conditions (accuracy  $\pm 0.5$ dB)
- ◆ Output frequency— $\pm 4\%$
- ◆ Reference conditions:
  - ◆ Temperature—23° C (73° F)
  - ◆ Relative humidity—65%
  - ◆ Atmospheric pressure—1013 mbar (760mm of Hg)

Battery test—Internal, calibrator will not work if voltage < acceptable range  
Shipping wt: 2lbs.

**KTS-2** ..... \$359.00



**NEW**



# outline<sup>®</sup>

## CONTROL UNIT & ELECTRONIC TURNTABLE SPEAKER TESTING SYSTEM

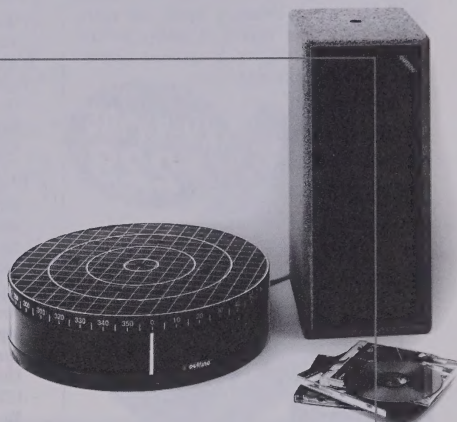
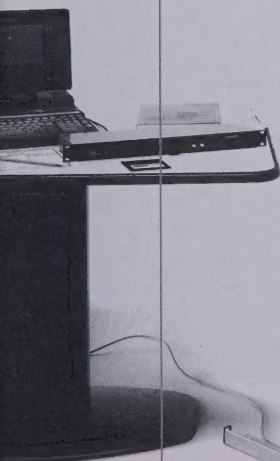
From Italy, a state-of-the-art speaker turntable system. Measure a speaker's polar plot pattern easily and inexpensively with this unique setup consisting of an electronic control unit, rotating turntable and optional turntable stand hardware kit.

Designed to work with high-performance analyzers—MLSSA or LMS—it can also be used with any measurement system using a TTL signal to drive external equipment.

The turntable drum is small and light, but it turns loudspeaker systems weighing up to 660 pounds and any size due to a rugged bearing gear measuring 11" in diameter.

The optional stand hardware kit completes the testing system, providing several mounting choices for a variety of testing heights.

**Optional Stand Kit**  
**KST2 ..... \$299.00**  
Shipping wt: 20 lbs.



**Control Unit & Turntable**  
**KET1A/ST1A ..... \$1,699.00**  
Shipping wt: 31 lbs.

Used by loudspeaker manufacturers, professional audio companies and individual designers, this system is a must for comprehensive loudspeaker testing.

### SPECIFICATIONS:

**Maximum load admitted:** 300kg.

**Input pulse:** TTL (from 5 to 12VDC)

**Output pulse:** TTL adjustable with 3" to 25" delay

**Maximum rotation speed:** 200mSec/degree

**Accuracy:**  $\pm 0.25^\circ$

**Rotational offset:** 5° to 45°, adjustable in 5° steps

**Controls:** Power on, Reset, Angular increment switch, TTL output delay adjust

**Input/output connections:** 9 pin connectors (DB9) Cabling system supplied

**Power supply:** AC 110-220V/50-60Hz DC 12-20V

**Power consumption:** 10W

**Dimensions:** ET1—Front panel Standard EIA 19" 2U—48.3cm W x 12.0cm  
D ST1—Diameter-35cm; Height-10cm.



## HANDHELD LCD OSCILLOSCOPE KIT

At last everybody can afford a portable LCD oscilloscope! This compact unit features all the function (and more) of an ordinary scope and comes with a high contrast, wide viewing angle display. All operations are performed at the touch of a button. It has a built-in sine wave generator, which comes in handy for audio equipment repair. Finally, it allows instant download of the most recent data to a computer, for further processing.



## FEATURES

- True RMS or peak to peak read out
- Markers for voltage and time
- Auto range function for input measurement
- DC readout with zero reference function
- Frequency readout through markers
- Dot join function
- Screen hold function
- Grid or ruler function
- Adjustable trigger level
- Trigger mode: normal, auto or single
- Trigger edge: rising or falling
- Waveform memory
- RS232 data output to computer
- Auto power off (can be disabled)

## SPECIFICATIONS:

- Maximum sample rate for repetitive signals: 5MHz
- Maximum sample rate for single shot events: 0.5MHz
- Input impedance: 1M $\Omega$  // 20pF
- Maximum input voltage: 100V (AC + DC)
- Input coupling: DC, AC and GND
- Vertical resolution: 8 bit (6 bit on LCD)
- Linearity 1 bit
- LCD: 64 x 128 pixels
- Timebase: 2 msecs. to 20 sec/div
- Input sensitivity: 5mV to 20V/div
- Sine wave generator: 400Hz / 1 Vrms // 10k $\Omega$  (adj.)

- Square wave output: 400Hz 3.5Vt
- Supply voltage: 9VDC/ min 200mA
- Rechargeable battery: 6x type AA / 900mA (not incl.)
- Charge current: 90mA
- Charging time: 14 hours
- Autonomy: 5 hours
- Operating temperature 0 to 50 degrees C (32 to 122 degrees F)
- Dimensions: 130 x 230 x 43 mm (5.1" x 9" x 1.7")

Shipping wt: 4 lbs.

### Bag for K7105 LCD Oscilloscope Kit (KV-K7105)

KV-K7105B..... \$19.95

### Probes for K7105 LCD Oscilloscope Kit (KV-K7105)

KV-K7105P..... \$17.95

## THE WARBLER OSCILLATOR KIT

Dick Crawford

This popular unit will produce a swept signal covering any  $\frac{1}{3}$  octave between 16Hz and 20kHz. The total harmonic distortion at the output is less than 1.5%, and the output voltage is adjustable 0-1V. When used with a microphone, the Warbler is more effective than a pink noise source in evaluating speaker system performance. It also reveals the listening environment's effect on sound through reflection and absorption. The sweep rate is set at about 5Hz. The unassembled kit includes 3 $\frac{1}{4}$ " x 3 $\frac{3}{8}$ " PC board, transformer, all parts, and article reprint. Case not included. Shipping wt: 2 lbs.

**KK-3..... \$119.95**

## ASSEMBLED WARBLER OSCILLATOR

Case not included. Shipping wt: 2 lbs.

**KK-3A ..... \$159.95**

## INVERSE STEREO RIAA NETWORK

This kit is an indispensable item for anyone who wants the maximum from phonograph records. The RIAA equalization function alters the low- and high-frequency amplitudes to improve recording quality. The phono preamp should restore the original by use of an RIAA equalization section. This inverse RIAA network enables you to test your phono preamp's equalization section for correct response. Anyone designing or building phono preamps would use this network as a template to ensure an accurate RIAA response. The kit comes complete with all parts needed and includes polystyrene capacitors, metal film resistors, gold-plated jacks and a cast aluminum box. Resistors and capacitors are included to allow selection of 600 or 900 ohms output impedance; the unit is designed for a source impedance of 300 ohms. An article reprint is also included. Shipping wt: 2 lbs.

**KL-3 ..... \$54.00**



## SUPER SWITCHABLE PINK NOISE GENERATOR

**Bernhard Muller**

This unique kit features a stereo/mono/reverse-polarity switch that distinguishes it from other generators. CMOS digital circuits form a pseudorandom bit stream generator switchable between mono, stereo, and stereo reverse, and another switch selects pink or (optional) white noise output. Pink noise rolls off between 16Hz and 20kHz at 3dB/octave and at 6dB/octave above 20kHz, while white noise is constant through the 16Hz-20kHz

range. The unit is powered by a 9V battery (not included). Included is an article reprint outlining the generator's use in audio system evaluation, especially helpful with speaker evaluation methods and room placement problems. The unassembled kit comes complete with 4 1/8" x 2 3/16" PC board, IC, precision resistors and capacitors, and switches. Case not included. White noise option requires additional .0022 microfarad cap and 1.8k resistor (not supplied). Article is from *Speaker Builder* 4/84. Shipping wt: 1 lb.

**KSBK-E4 .....\$49.00**

## ASSEMBLED SUPER SWITCHABLE PINK NOISE GENERATOR

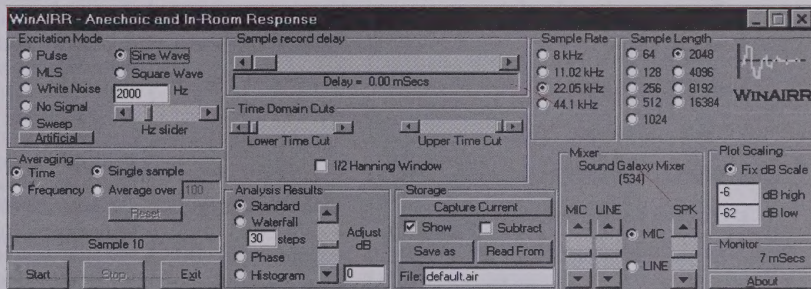
The assembled unit, case not included. White noise option requires additional materials (not supplied). Shipping wt: 1 lb. PLEASE ALLOW 4-6 WEEKS FOR ASSEMBLED ITEMS.

**KSBK-E4A ..... \$79.00**

## WINAIRR (ANECHOIC AND IN-ROOM RESPONSE FOR WINDOWS 95/NT)

**Julian J. Bunn**

WinAIRR is a software tool for measuring the frequency response of loudspeaker systems. It runs on a PC with Windows 95 or Windows NT equipped with a sound card that features full-duplex operation. Although WinAIRR is not a professional measurement system, useful and reproducible results can be obtained with careful adjustments of the supplied controls.



### VERSION 4.0 FEATURES:

Excitation Modes: Pulse, MLS, White Noise, No Signal, Sweep, Sine, Square, Artificial

Averaging: Time or Frequency

Sample Record Delay

Time Domain Cuts

Sample Rate Adjustment

Sample Length Adjustment

Analysis Results: Standard, Histogram, Phase, Waterfall, Full Mixer Control  
Plot Scaling, Adjustment, and Subtraction

Storage of Results to Disk and Retrieval from Disk

Version 4.0 includes Executable and software manual in HTML (Web Browser) format. Requirements—IBM compatible, 486+ (Pentium recommended); Windows 95 or Windows NT; 8 Mb RAM (32 Mb recommended); 1 Mb hard disk space; sound card capable of full-duplex operation; VGA -1024X768 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-AIRW ..... \$49.95**

### DEMO ONLY

**SOF-AIRWDEM ..... \$5.00**



## AIRR (ANECHOIC IN-ROOM RESPONSE) SOUNDBLASTER SOUND CARD SPEAKER RESPONSE SOFTWARE

Julian J. Bunn

AIRR is a software tool for measuring the frequency response of loud-speaker systems. It runs on a PC under DOS or in a Windows 95 DOS box. A SoundBlaster sound card 16 or above (not a SoundBlaster-compatible) is necessary. (AIRR won't run under Windows NT). AIRR is not a professional measurement system. The results from AIRR depend fundamentally on the quality of the sound card electronics. **This new version represents a significant rewrite of the program and features:**

- a. Pulse (dirac/sinc mode or compatible)
- b. MLS (Maximum Length Sequence) mode
- c. Sine wave mode
- d. Square wave mode
- e. White noise
- f. Time domain plot
- g. Frequency domain plot
- h. Phase plot
- i. Waterfall plot
- j. DMA rate adjust
- k. DAC/ADC levels
- l. CALSOD compatibility

Requirements—IBM compatible, 386+ (Pentium recommended); DOS 5.0+; 8Mb RAM, (>16Mb recommended); 1Mb hard disk space; Creative Labs SoundBlaster brand sound card 16, 32 or 64; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-AIR..... \$49.95**

**Demo Only**

**SOF-AIRDEM..... \$5.00**

## MAC SLM

Dr. Victor Staggs  
([exo.com/~vesphd/index.html](http://exo.com/~vesphd/index.html))

It's a sound level meter! It's a real-time spectrum analyzer! And it uses a minimum of added hardware—usually none! Mac SLM uses the sound input facilities in modern Macintosh computers, or it uses external devices. It automatically accommodates 8-bit words at 22.254 kHz or 16-bit words at 44.1 kHz, so you can use whichever you want for measuring acoustical or electrical signals. Mac SLM is perfect to use with commercially available test CDs. You can measure speakers, optimize their room placement, gather design data, measure amplifier distortion, and test filters. Outdoors you can measure noise pollution, test sound-producing devices such as horns and sirens, test your car's engine better than with a stethoscope, and do a million other things you couldn't do before because you couldn't afford an expensive spectrum analyzer. The sound level meter mode gives you flat, A, B, or C weighting, and it puts big numbers on the screen that you can see from across the room. It uses white graphics on a black screen to help save your portable's batteries. You can use the Apple microphone or your own, and still keep the Mac SLM calibrated. The spectrum mode displays the spectrum of sound in  $\frac{1}{3}$ ,  $\frac{1}{6}$ , or  $\frac{1}{12}$  octaves. You can use free running or time averaging mode, and you can fix or free the reference level to detect level shifts quickly. You can subtract background noise from a system measurement to improve your data, and store and edit an automatically generated calibration curve. You can save spectrograms to disk and print them later, and you can preview them before printing. Mac SLM's amplitude resolution is as good as that of your screen or printer. Includes 42-page manual. Requirements—System 7, 640K RAM, 640x400+ pixels and a 68020, 68030 or 68040 CPU with separate or internal FPU (math coprocessor), or a PowerPC Macintosh. It will run more slowly without the FPU. Sorry, not usable with original Mac 228K, 512K, Plus 512DE, SE, SE/30, Classic, Classic II or Color Classic. Shipping wt: 1 lb.

**SOF-SLM..... \$79.95**



## NOW: VERSION 3.10!

### SOUNDEASY V. 3.10

### INCLUDING BOXCAD V. 3.00

#### Bodzio Software

As detailed in *Speaker Builder* articles from issues 1 and 4 of 1998, the new version 3.10 features improved and expanded implementation of Finite Element Method (FEM) for low-frequency room acoustic modeling. By increasing the number of vertical layers and the number of nodes, the analyzed object (listening room) can now be sliced vertically in 10 layers and each layer can be edited separately. This allows very complex room shapes to be analyzed. Other improvements include a new Active Equalization function provided for the first time in the "Box" module. This very useful feature is intended for the design of electronically equalized subwoofers. The EQ circuit is designed in the "Crossover" module and then loaded back into "Box" module to be included in enclosure modeling process. Circuit component values can be edited from "Box" module, so all changes to the EQ circuit can be instantly observed.



**SoundEasy** is Windows 95-based menu-driven software which evolved from SSD 3.0. The program takes advantage of the SVGA graphics capabilities of your computer (800x600 pixels) and enables the designer to create, evaluate and optimize 2, 3, 4 or 5-way loudspeaker systems prior to starting the assembly of the enclosure. This version includes a companion program, **BoxCad**. **BoxCad**'s sole focus is enclosure design. **BoxCad** is a free-standing program at present which is included with **SoundEasy** to allow for advanced enclosure design. **SoundEasy** performs the following functions:

1. Loudspeaker driver reference library creation
2. Loudspeaker enclosure design
3. Sealed, vented, double-chamber and triple chamber, sealed-vented and vented-vented enclosures supported
4. Loudspeaker enclosure optimization
5. Compensation of the driver impedance or amplitude
6. Crossover filter design & optimizations
7. System frequency response evaluation & optimization
8. Frequency response of the system "in-room"
9. Calculators-L-pad, Series LRC, Zobel Network, Impedance peak suppressor, Lattice Network and vent calculator (three types)
10. Thermal analysis
11. Polar plots
12. Time domain responses
13. Importing data—from IMP, LMS and CLIO. Includes manual and security key

Requirements—IBM compatible Pentium 75 (Pentium Pro 200 recommended); Windows 95; 48 Mb RAM (64 Mb recommended); 10Mb hard disk space; mouse; SVGA—800x600 pixels, 16 colors. Shipping wt: 4 lbs.

**SOF-SOU** ..... \$269.00

## ACTIVE FILTER WORKSHOP

### Frank Ostrander

**Active Filter Workshop** is a suite of filter-design utility programs designed to operate in the Windows environment. Types of filters handled include Sallen & Key, State-Variable, shelving, "Hard-Wired Parametric" and "All-Pass" delay. While the program is primarily intended to be used by loudspeaker designers who need to design complementary electronics (crossovers, equalizers, etc.) it should have numerous other uses in engineering and education. **Active Filter Workshop** provides the user with as much insight as possible by offering detailed schematics and showing the math necessary to determine component values. Shipping wt: 1 lb.

**SOF-AFW** ..... \$79.95

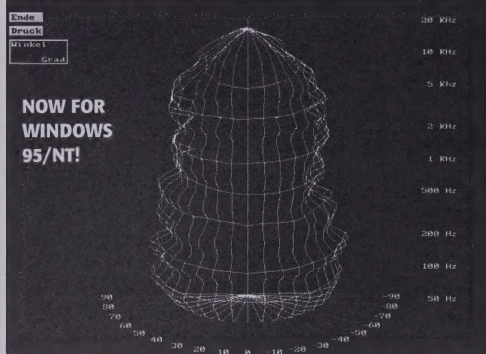
## FILTER WORKSHOP

### Frank Ostrander

This program combines a useful set of passive network design tools with an instructional resource for network design. Calculations include design of attenuation networks (L-pads); high- and low-pass filters; shelving networks (both high- and low-pass); band-reject filters; inductor winding; and impedance correction networks. Determines component values based on resistive termination as opposed to complex driver SPL and impedance load functions. Straightforward and easy to use. "Undoubtedly one of the best (resistance-based) network calculators I have seen."—Vance Dickason, editor, *Voice Coil*. Shipping wt: 1 lb.

**SOF-FWK** ..... \$79.95





## AUDIOCAD PRO 8.0

Michael Bernhard Uibel

From Germany! AudioCad Pro 8.0 is a loudspeaker development package—with English dialogue and manual included—specifically designed for the professional user. The most popular such program in Germany, it contains a wide range of simulation and evaluation routines for the development of loudspeaker boxes and passive crossovers. Supports 9- and 24-pin, inkjet, laser printers; on-screen help; mouse-controlled user interface. Features include a dBase-compatible databank with over 800 drivers already loaded; measurement databank for storing amplitude, impedance, electrical, and acoustical phase patterns; manual data input option; measuring system interfaces for AMSPC, AudioLab, AudioTest Board, DAAS3, DSA, IMP, LMS, MEPEG, and MLSSA; response simulation using T/S parameters, enclosure simulation for infinite baffle, bass reflex, and single and double vented band-pass; TL, tractrix, an exponential horn calculation without simulation; graphical enclosure construction and parts lists; crossover simulation for two- to four-ways; graphical editing of circuit diagram; bass, treble, and bandpass calculation for Bessel, Butterworth, Chebychev, Linkwitz, or Compromise; crossover optimization; export functions for all simulations. Requirements—IBM compatible 286+ (Pentium 100MHz recommended); 3Mb hard disk space; CD-ROM Drive, MS-compatible mouse, HP-Laserjet printer or better or any comparable Windows-suitable printer; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOFAUD** ..... \$34.95

**(DEMO ONLY) SOFAUDEM** ..... \$5.00

## X\*OVER 3 PRO SOFTWARE FOR WINDOWS

Harris Technologies

This package helps in the design of two-way and three-way passive dividing networks, as well as simple load-compensating circuits, and calculates the component values for many common first, second, third, and fourth-order networks. Two-way designs include Bessel, Butterworth, Chebychev, Gaussian, Legendre, Linear-Phase, and Linkwitz-Riley, while three-ways include 3- and 3.4-octave spreads between crossover frequencies. Other features include design capability for load-compensating circuits such as L-pads, series notch filters, and loudspeaker impedance equalization networks; circuit diagrams with component lists that can be displayed and/or printed; and a new filter for first-order two-way networks, "Solen Split -6dB," in which the high-pass and low-pass halves of the network have Butterworth slopes and are set farther apart so that they cross at approximately -6dB (versus the usual -3dB). Includes fully illustrated manual. Requirements—IBM compatible Pentium+; Windows 95+, Windows/NT 4+; 16 Mb RAM; 17 Mb hard disk space; mouse and printer; VGA—640x480 pixels, 256 colors. Shipping wt: 1 lb.

**SOFXOV** ..... \$99.00

## CALSOD (Computer-Aided Loudspeaker System Optimization and Design) v. 1.40 Standard Software

Witold Waldman/Audiosoft

CALSOD has for many years been one of the most extensive, most respected, and most dependable audio software packages in the world. Written under MS-DOS, its excellent CGA/EGA/VGA/Hercules graphics support mimics Windows in many ways. A math coprocessor is not required, but will be used if present. CALSOD is available in both Standard 1.40 and Professional 3.10 versions. A user's manual is supplied on disk, with accompanying hard copy illustrations. When using CALSOD, you create a data file from which all your required system response functions are automatically calculated. The Main Menu allows you to set up the frequency limits and various optimization parameters required. It is easy to simulate new systems simply by editing driver models previously created. Both versions of CALSOD contain many functions for modeling vented-box, closed-box, passive-radiator, and filter-assisted systems, including the ability to show up to four different driver models in a system of up to eight drivers total and the optimization of passive crossover networks with up to 60 components. Professional CALSOD (see **SOFCAL2** below) contains many MORE features, including the ability to import files from analyzers such as IMP, MLSSA, LMS, System One, and SYSid. Requirements—IBM compatible; DOS 640K RAM, 3.5Mb hard disk space; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOFCAL1** ..... \$69.95

## BASSBOX 6 PRO SOFTWARE FOR WINDOWS

Harris Technologies

BassBox 6 Pro is a great program that aids in the design of bass loudspeaker enclosures in two ways. First, it models how a speaker will sound in a variety of boxes. This small-signal analysis includes the amplitude (frequency response) and voice coil impedance response. Second, it models the maximum loudness of the loudspeaker/

box combination. This large-signal analysis includes the displacement-limited maximum power response. Once these tools help you to decide what size and type of box to use, BassBox will then help you calculate the dimensions of its port, if the design is vented, and the box itself. Other features include: multiple graph overlay capability for easy on-screen comparison;

examination of one speaker in several different boxes or several different speakers in the same box; 1000-driver database which can be searched, edited, or added to; acceptance of both Thiele/Small (T/S) and electromechanical (E-M) parameters; allowance for damping specification; manual override of vented box tuning and QL; design capabilities for multiple-vented boxes, custom passive radiator boxes, and both optimum and custom closed boxes; multi-



## CALSOD V. 3.10 PROFESSIONAL SOFTWARE

Witold Waldman/Audiosoft

This great package from Australia is the upgrade to the CALSOD 2.50 Professional software from which smaller, CALSOD Standard versions such as 1.30 and 1.40 were originally extracted. Although CALSOD Standard 1.30 is an excellent popular package which more than does the job for most people, Professional CALSOD 3.10 differs in that it is more extensive and aimed (as CALSOD was originally intended) at professional engineers. Professional CALSOD contains many MORE features, including the ability to import files from analyzers such as IMP, MLSSA, LMS, System One and SYSid. On-disk manual included. Additional features of CALSOD Professional include:

- *Double-ported bandpass enclosure models for sound pressure and impedance response calculations*
- *Vented-box, closed-box, and passive-radiator simulations include the effects of enclosure leakage, absorption, and port/passive-radiator losses*
- *Active crossover network simulation and optimization*
- *Impedance optimizer for designing zobel and conjugate load matching networks to meet a desired target impedance function*
- *SPL optimization using up to 5 on-axis and off-axis observation points*
- *Powerful curve-fitting optimizer for determining sound pressure and impedance models of loudspeaker drivers*
- *Importing of SPL and impedance data from MLSSA, SYSid, System One, LMS, and IMP loudspeaker test systems, including SPL optimization using up to 5 observation points to include off-axis radiation behavior*
- *Optimizing Thiele/Small parameter estimator utilizing impedance data from added mass, differential box volume, and vented-box impedance measurements, including frequency-dependent voice coil inductance*
- *Piston approximation for driver models to simulate driver off-axis radiation characteristics*
- *Specify orientation of principal radiation axis of each individual driver model used in the loudspeaker system*
- *Simulation of the effects of room gain on low-frequency response to help the tuning of low-frequency alignments*

Requirements—IBM; DOS (will run with Windows 95); 640K RAM; 3.5Mb hard disk space; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-CAL2 .....\$269.00**

**(DEMO ONLY) SOF-CALDEM.....\$5.00**

ple woofer designs including standard, push-pull, and compound (isobaric) acoustical parameters as well as parallel, series and series-parallel electrical parameters; box dimension calculator accommodating many different volume shapes in a 20-volume database; English or metric units; and print capability by most printers supported under Windows 95/NT 4 and later. Includes fully illustrated manual. Requirements—IBM

compatible Pentium+; Windows 95+, Windows/NT 4+; 16Mb RAM; 15Mb hard disk space; mouse and printer; CD-R compatible CD-ROM drive or 1.44Mb 3.5 disk drive; VGA—640x480 pixels, 256 colors. Shipping wt: 1 lb.

**SOF-BAS .....\$129.00**

## BOXMODEL V. 5.0 FOR WINDOWS 3.X/95

Robert M. Bullock III with Robert White

A great box design program for applying Thiele/Small parameters to up to four systems being designed. The program does large- and small-signal analysis of driver low-end performance below 400Hz. It is somewhat of a next generation of the authors' BOXRESPONSE program, although it is considerably more sophisticated. Recently updated version includes transient response graph capability for up to four systems being designed. Although no automatic calculation of optimal alignment is provided by BOXMODEL itself (See SOF-BOX), the program has numerous advantageous features.

1. Instant updating of all system parameters whenever one is changed
2. Simultaneous retention of data on up to four different systems
3. Simultaneous display on a common axis of parameters from up to four systems, for easy performance comparison
4. One-step inclusion of high-pass equalizer through order 3, allowing easy comparison of performance with and without
5. Easy accommodation of passive-radiator systems, as well as closed or vented boxes
6. Provision for distributing loss among absorption, leakage, and vented/passive-radiator, allowing for easy assessment of performance variations due to various possible loss distributions
7. Easy selection of ambient temperature and barometric pressure, immediately updating relevant parameters
8. On-line help or suggestions for most items
9. Running calculations of miscellaneous data such as CMS, vent length, a, h, s

Version 5.0 includes help file. Requirements—IBM compatible 386+ (486 recommended); Windows 3.1+ or Windows 95; 4 Mb RAM, 600 Kb hard disk space; mouse and printer recommended; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-MOD2..... \$39.95**

## BOXRESPONSE

An IBM Program for the Thiele/Small Models

Robert M. Bullock and Bob White

Very straightforward, menu-driven, and flexible, this package provides model-based performance data for either closed-box or vented-box loudspeakers with or without a first- or second-order electrical high-pass filter as an active equalizer. It can be used for designing closed, vented, passive radiator, and electronically augmented vented boxes—and from different perspectives (for example, you can base the design on a flat response or specify different descriptive variables). Version 1.0, help file. Requirements—IBM compatible 486+; DOS (runs with Windows 95); 384 Kb RAM, (523 Kb recommended); 150 Kb hard disk space; printer recommended; CGA—320x200 pixels, 4 colors. Shipping wt: 1 lb.

**SOF-BOX ..... \$50.00**



## BOXMODEL V. 4.0 FOR DOS

Robert M. Bullock III with Robert White

DOS Version 4.0 of this great box design program. From *Speaker Builder* 6/90; article reprint included. Includes help files. Requirements—IBM compatible 486+ recommended; math coprocessor recommended; DOS; 384 Kb RAM (523 Kb recommended); 300 Kb hard disk space; printer recommended; CGA—320x200 pixels, 4 colors or VGA 640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-MOD1 ..... \$39.95**

### DEMO ONLY

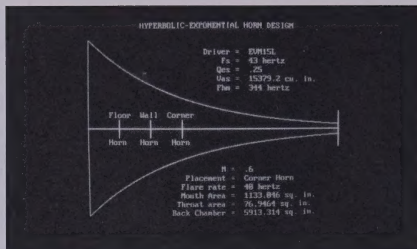
**SOF-MOD1DEM ..... \$5.00**

## PROFESSIONAL LOUDSPEAKER DESIGN POWERSHEET

Marc Bacon

Surely at the front of the spreadsheet speaker-design wave of the future, the LOUDSPEAKER DESIGN POWERSHEET was written by professional engineer Bacon with one purpose in mind: to make computer-aided speaker design accessible to everyone. The program covers a wide range of knowledge taken from the most recent publications in the field, yet is affordable and extremely simple to use. An unprotected source code allows the user to customize and build upon individual spreadsheets for his own use. Individual programs are accessed through a user-friendly menu tree, and context-sensitive HELP and introductory README.1ST files are also included. Requires Lotus 1-2-3, Quattro Pro, or another spreadsheet which can use Lotus .WK1 files. PLEASE NOTE THAT SPREADSHEET SOFTWARE IS NOT INCLUDED. NOT COMPATIBLE WITH QUATTRO FOR WINDOWS. From *Speaker Builder* 4-5/92. Program will work with later versions of Lotus 1-2-3 or Excel software that reads Lotus files. Spreadsheet software not included. Requirements—IBM compatible 386+; DOS (runs with Windows 95); 640 Kb RAM; 3 Mb hard disk space; printer optional; monochrome monitor or greater. Shipping wt: 1 lb.

**SOF-PSH ..... \$69.95**



## BASS HORN DESIGN

A.L. Senson

This program, patterned after Brian Smith's tractrix horn design program, calculates dimensions for a catenoid, exponential or hyperbolic bass horn and prints out in less than a minute. Not only does it provide a horn's general data, such as mouth and throat areas and back-chamber volume, but it will also give you the dimensions to design your enclosure. Requirements—IBM compatible 286+; DOS; 1 Mb RAM; 50K hard disk space; printer; VGA. Shipping wt: 1 lb.

**SOF-HOR ..... \$19.95**

## CIRCUIT DESIGN

### EDWIN NC

Visionics

Now available in an affordable noncommercial version! The fully integrated Windows-based software package for PCB design. EDWin NC delivers a complete end-to-end CAE/CAD system. Not simply a PCB layout program, it provides simultaneous schematic capture and layout; mix-mode simulation is also provided as well as Arizona autorouting. Options including thermal analysis and EDSpice simulation are also available. EDWin NC Deluxe 3 is delivered on CD-ROM and includes extensive on-line help. Version 1.60 includes "Getting Started" manual in print and on system CD-ROM. The optional modules are delivered on 3½" disk. Requirements—IBM compatible 386+ (Pentium +60MHz recommended); Windows 3.1+ or Windows 95; 8 Mb RAM (16+Mb recommended); 40 Mb hard disk space; CD-ROM driver, mouse; VGA. Shipping wt: 2 lbs.

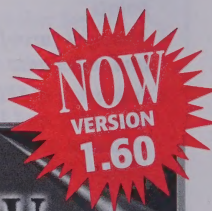
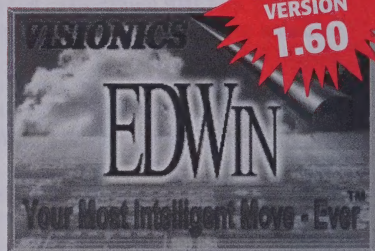
**SOF-EDW ..... \$149.00**

EDSPICE Module for EDWin NC ONLY. Shipping wt: 1 lb.

**SOF-EDWS ..... \$59.00**

Thermal Analysis Module for EDWin NC ONLY. Shipping wt: 1 lb.

**SOF-EDWT ..... \$39.00**





## HANDY UTILITIES FOR THE AUDIO DESIGNER

### IMP AIDS UTILITY SOFTWARE PACKAGE

G.R. Koonce

These handy DOS programs from one of the country's great thinkers will add usefulness and value to your IMP or LAUD system. While the files contain IMP names, they are actually equally usable with LAUD. IMPSPACE designs absolutely anechoic test layouts. IMPROOM designs near field and far field test layouts. IMPZOBEL designs simple and complex zobels based on input .ZMA files. IMPPCOEQ (Passive Crossover and Equalizer) places a four-branch network ahead of the system defined by .FRD and .ZMA files. And IMPEQLZR designs down-slope equalizer functions used with .FRD files. In addition, the disk contains three datafiles to play with IMPSPACE. Reviewed in *Speaker Builder* 4/95. Requirements—IBM compatible, math coprocessor highly recommended; 640K RAM; 1 Mb hard disk space; mouse and printer; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

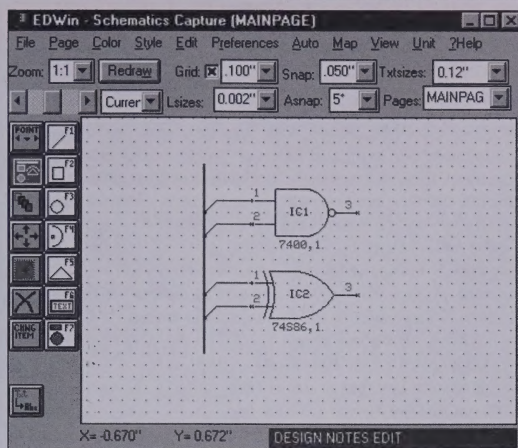
**SOFAID..... \$19.95**

### KOONCE'S PRIVATE FILES

G.R. Koonce

At long last, we have persuaded Mr. Koonce—one of America's great computer/loudspeaker gurus—to make available to the public this two-disk set containing 19 unique programs from his own personal library. As wide-ranging in purpose as they are fun to use, these handy IBM files developed over the years for Koonce's personal use can now benefit you! Described in *Speaker Builder* 2/94. Requirements—IBM compatible, math coprocessor highly recommended; 640K RAM; 2Mb hard disk space; printer; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOFPKF..... \$9.95**



## WHAT'S NEW IN VERSION 1.60?

- Menu in English, French, Spanish or Japanese.
- Now accepts RatsNet input/output from/to virtually any other CAD systems.
- Library Wizard for automatic creation of schematic and layout symbols with provision for attaching three info fields to each device in the library.
- Full Name
- Simulation Reference (for use in EDSpice)
- External Index Code (for attaching external details to be used by the List of Materials editor)
- Library Search Engine easily locates a particular device or a series of devices.
- Re-organized library contains more analog parts.
- Schematic: repack and unpack functions in block edit mode.
- Layout-DXF Input: New feature imports board outlines in .DXF files from AutoCad
- Postprocessing: Possible to generate a plot of the template from screen. The other new Gerber output available is the Mechanical Plot containing board dimensions and board description notes.
- New tools for editing dimensions.
- Airgap Mask Edit allows more intuitive Power and Ground Plane creation.
- Better way of defining Reference Net Valid Containers.
- New option to change airgap for all objects in the selected layer.
- In NC-Drill, now displays multiple holes and their locations.
- New look for mixed mode simulations.
- EDSpice
- Family approach for storing model and macromodel libraries for EDSpice. Allows organization of model parameters/macromodels to sub-directories according to manufacturer.
- Includes libraries from Texas Instruments, National Semi and ComLinear.
- Automatic insertion of A/D and D/A bridges during simulation.
- Display of nodes in Spice—naming convention during map nets.
- Recreating indexes for building Spice subcircuit references, improving the loading time of Symbol library editor and EDSpice.
- Option settings for complex values in EDSpice AC analysis, ie., Diagram Generator now allows the user to plot real, imaginary parts, phase and magnitude of EDSpice output.
- Thermal Analyzer Option now includes option to calculate the effect of heat sink and an extended thermal library.
- List of Materials Editor creates and attaches external information to devices.
- Customization of packaging information.

Ask about a new option, EMA—Electromagnetic Analyzer (EMA) add-on for the EDWin EDA system.



## RESCALC— WINDOWS RESISTOR CALCULATOR

**James Bupp, PC Resources**

RESCALC (version 2.2) is a simple PC computer program for Windows that helps a designer or technician with resistor arrangements in designing or maintaining electronic equipment. It provides information in the following categories:

- For dividers: simple, balanced, loaded, multitap
  - For attenuators: simple, balanced
  - Delta/wye transforms
  - Series/parallel
  - Resistance ratios
  - A list of resistance sets
  - Divider/attenuator calculation
  - Parallel or series connection
- Requirements—IBM compatible; Windows 3.1+ or Windows 95; 1 Mb hard disk space. Shipping wt: 1 lb.

**SOF-RES ..... \$9.95**

## MODES FOR YOUR ABODES FOR DOS

**Joseph Saluzzi**

This unique program helps acousticians and audiophiles in designing listening rooms or better understanding a room's sonic character. MODES is a menu-driven, user-friendly program that rapidly generates and prints out axial, tangential, and oblique modes, as well as predicts axial coincidences. Its database summary screen provides a convenient, rapid means of running multiple calculations and comparing many room sets. Supports standard text printing. From *Speaker Builder* 6/92, 1-2/93. Article reprints included. Requirements—IBM compatible 486+ (100 MHz or higher recommended); DOS 5.0+; 640K RAM (1Mb recommended); 1 Mb hard disk space; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-ABO ..... \$25.00**

## THE LISTENING ROOM FOR IBM

**Sitting Duck Software**

This interesting program predicts standing wave modes in small rooms and is designed for positioning speakers—and the listener—in such a way as to minimize standing wave effects and other room-generated influences. It allows for a full range of speaker and listener movement in 3D space and continuously updates a standing wave Pressure versus Frequency display. Version 4.0 includes printed manual. Requirements—IBM compatible 386+; DOS (will run with Windows 95); 640K RAM; 1 Mb hard disk space; Color monitor—640x480, 16 colors. Shipping wt: 1 lb.

**SOF-TLR1 ..... \$47.50**

## ROOM DESIGN & ACOUSTICS

### VISUAL EARS

**KB Acoustics**

Visual Ears allows the audio enthusiast to enhance system performance by minimizing standing wave and boundary reflection problems with proper speaker and listener placement. In most cases, room problems can be reduced to satisfactory levels, at a prime listening position, without resorting to obtrusive acoustical control devices. The program features many enhancements:

- \* Slanted or Cathedral Ceilings
- \* Drag and Drop for the listener and speakers
- \* Supports Woofer/Satellite systems and considers the crossover
- \* Supports 3-Way systems and considers the crossover
- \* Provides 1/3 octave averaging
- \* Uses high speed 32-bit algorithms written in C
- \* Models system low frequency roll-off
- \* Saves multiple set-ups in a single file
- \* A multiple file capability is useful for dealers who are setting up customers' rooms
- \* Operates in either Imperial or Metric mode

Version 3.2 includes manual. Program reviewed in *Speaker Builder* 5/96. Requirements—IBM compatible 486+; Windows 3.1+, Windows 95 or Windows/NT; 16 Mb RAM (32 Mb recommended); 1 Mb hard disk space; mouse and printer recommended; VGA—640x480 pixels, 16 colors. Shipping wt: 1 lb.

**SOF-VER..... \$89.95**

## MODES FOR YOUR ABODES FOR WINDOWS 3.1+

Requirements—Windows 3.1+; 4 Mb RAM (8 Mb recommended); 5 Mb hard disk space, mouse recommended. Shipping wt: 1 lb.

**SOF-AB01 ..... \$49.95**

## MODES FOR YOUR ABODES FOR WINDOWS 95

Requirements—Windows 95; 8 Mb RAM (16 Mb recommended); 10 Mb hard disk space, mouse recommended. Shipping wt: 1 lb.

**SOF-AB02..... \$49.95**

## THE LISTENING ROOM FOR MAC

**Sitting Duck Software**

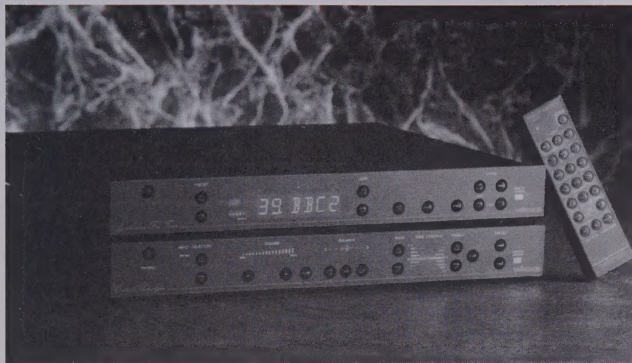
Like the popular PC version, this program for the Macintosh allows you to interactively position listener and speakers in your listening room, although this is now accomplished using the Macintosh "dragging" graphics technique. The program actively displays the magnitudes of standing waves, as well as the effects of (now up to 124) early reflections on the direct response. Several features have been added, notably local optimization of listener and/or speaker positions to maximize, minimize, or smooth the standing wave patterns. This MAC version also enables you to model the woofer low frequency limit and slope, and produces high-resolution output including multiple graph overlays. Version 1.1.1. Includes printed manual. Requirements—Mac; 512K+ memory; 1 Mb hard disk space. Shipping wt: 1 lb.

**SOF-TLR2 .....\$74.25**



## VELLEMAN KITS FOR THE AUDIO ENTHUSIAST!

From Belgium, high quality DIY audio kits! Velleman presents some of the best kits available today. From complete instructions to electronic parts laid out in order of assembly on tape rolls, these kits are a joy to build and enjoy. You'll be sure to appreciate the user-friendly focus Velleman provides with each one of these audio DIY kits!



### SOLID STATE DIGITALLY-CONTROLLED PREAMP KIT

Containing no potentiometers whatsoever, this preamp kit features digital control of all functions. Volume, tone control, balance, and input selection can all be operated using push-buttons with LEDs giving a clear indication of all settings. All functions may be operated with optional remote control unit (#KV-K4101). A switched power output has also been provided, allowing the rest of your installed equipment to be switched on and off via remote. On top of this, your own priority settings can be programmed in, which become the default settings when the unit is switched on or can be invoked at any time. Input sensitivity: Phono-5.5mV/50 kOhms, CD-500mV/32 kOhms, Tuner, Tape 1 & 2-360mV/22 kOhms. Output level: Line 1V. Signal-to-noise ratio (A-weighted): Phono-75dB, Tape, CD, Tuner-100dB. THD: 0.01%. Frequency response: 8Hz-150kHz (-3dB). Channel separation: 90dB. Crosstalk: 99dB. Headphones (not included) output: 280mW/32 Ohms. Mains output: 5A. Consumption: 6W max. Dimensions: 16 $\frac{3}{4}$ "W x 2"H x 13 $\frac{3}{4}$ "D. Shipping wt: 16 lbs.

**KV-K4100 .....\$395.00**

### 15-CHANNEL IR XMTR REMOTE CONTROL KIT

This infrared transmitter kit may be used to remotely operate Velleman pre-amp (#KV-K4100) or tuner (#KV-K4500). A special safety key is provided which allows the memory content (or stations in the case of the tuner) to be preserved in order to prevent unwanted overwriting. This remote control unit kit is unique by virtue not only of its versatility, but also of its classy aluminum case and special Velleman tactile keyboard. Transmitter/receiver range: +/-98 ft. Supply voltage: 9V battery. Dimensions: 2" x 1" x 6 $\frac{7}{8}$ ". Shipping wt: 2 lbs.

**KV-K4101..... \$75.00**

**Works with  
KV-K4100  
or KV-4500!**



### STEREO VALVE AMPLIFIER KIT

This kit makes the high power valve (tube) amplifier affordable, so anyone can enjoy that sublime 'valve sound.' The sound of valves has yet to be surpassed, either by transistors or by FETs. In the course of developing this amplifier, special attention has been given to the housing so that the expensive valves are on display in a way that is pleasing to the eye. Ultralinear output transformers (toroidal core) are supplied with the kit. Output power: 2x200W music power; 2x95W RMS Class AB; 2x15W Class A. Load 4 or 8 Ohms. Power bandwidth: 10Hz-60Hz (-3dB) at max output. Frequency range: 4Hz-100kHz (-3dB ref. 1W). Harmonic distortion: 0.08% (1kHz/1W). 0.63% (1kHz/max output power). Signal-to-noise ratio: 102dB (A-weighted). Channel separation: 67dB. Input impedance: 100k Ohms. Input sensitivity: 0dB (0.77mV RMS) at 95W. Damping factor: 25. Dimensions: 16.6"W x 5.1"H x 13.7"D. Shipping wt: 48 lbs.

**KV-K4040 .....\$995.00**



## SOLID STATE SYNTHESIZED FM TUNER

This high-quality FM receiver kit is the ideal complement to Velleman's K4100 preamp (#KV-K4100), although it can be used with other amps as well. The idea behind it is to make adjustments as easy as possible without special measuring equipment. The high-frequency end is therefore assembled and preset in the factory. Complete with case. Functions: 40 presets; station name for each preset; 2 antenna inputs (selectable); automatic recognition of stations already stored during tuning; signal strength indication. Dimensions: 16 $\frac{3}{4}$ "W x 2"H x 13 $\frac{3}{4}$ "D. Remotely controllable by infrared transmitter sold separately (KV-K4101). Shipping wt: 16 lbs.

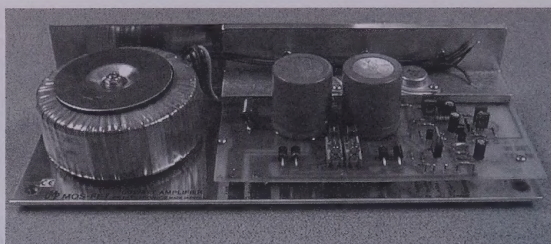
**KV-K4500 ..... \$395.00**

## SUPER ACCURATE ADD-ON VU METER

### BK Electronics

Made for the OMP/MF series MOSFET power amp modules, this device from England has a very accurate visual display employing eleven display LEDs—seven green and four red—plus an additional LED on/off indicator. Sophisticated logic control circuits for very fast rise and decay times. Tough, molded plastic case with tinted acrylic front, easily connected to amp modules with only three wires. Tolerance: within +/-1dB. Input impedance: 10k. Size 83.5mm x 27mm x 45mm. Power supply required: 12V-13VDC @ 40mA. Frequency response: 20Hz to 100kHz. Sensitivity: 775mV-0dB. Dynamic range: -20dB to +3dB (23dB). Shipping wt: 1 lb.

**KM-15A.....\$29.95**



## OMP/MF MONO MOSFET POWER AMP MODULES

### BK Electronics

The widely renowned OMP/MF Series II of MOSFET power amp modules offers no compromise, high quality audio power at exceptionally attractive prices. All modules are supplied as one complete built and tested unit. These amps are used internationally by professionals in the leisure, disco, public address, and studio industries, to name but a few, where they are well known for their quality, reliability, and price/power/performance ratios. They have also been used successfully in industry and university research applications. The OMP/MF series utilizes the latest MOSFET output devices, together with a sophisticated circuit design, both of which serve to achieve an enviable specification. These factors result in the exceptional clarity and realism which is essential to complement today's high technology sound equipment. Generous power supplies are employed in the OMP/MF series, incorporating a toroidal transformer. Glass fiber printed circuit boards are utilized, mounted on solid aluminum chassis with extensive heatsinking. These features combine with rugged construction to deliver a superlative level of reliability. An on-board, low voltage supply and drive circuit are provided to operate the optional LED Vu meter (see #KM-15A). Five models are available, offering a choice of output powers from 100 watts RMS up to a staggering 1000 watts RMS at 2 ohms impedance. Each module is available with Standard input sensitivity—500mV input sensitivity, 100kHz bandwidth. PEC (Professional Equipment Compatible)—775mV input sensitivity and 50kHz bandwidth—also available by special order.

(Call for delivery estimate)

### 115W STANDARD SENSITIVITY MONO MOSFET AMP MODULE

Shipping wt: 12 lbs.

**KM-14A/100S..... \$139.95**

### 210W STANDARD SENSITIVITY MONO MOSFET AMP MODULE

Shipping wt: 12 lbs.

**KM-14A/200S..... \$219.95**

### 315W STANDARD SENSITIVITY MONO MOSFET AMP MODULE

Shipping wt: 23 lbs.

**KM-14A/300S..... \$269.95**

### 455W STANDARD SENSITIVITY MONO MOSFET AMP MODULE

Shipping wt: 23 lbs.

**KM-14A/450S..... \$399.95**

### 1050W STANDARD SENSITIVITY MONO MOSFET AMP MODULE

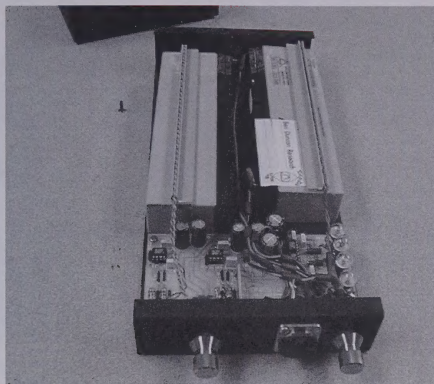
Shipping wt: 45 lbs.

**KM-14A/1000S ..... \$699.95**



# PHONES-01 HEADPHONE AMPLIFIER KIT

Ben Duncan



A DIY mini-power amplifier kit optimized for driving high quality medium impedance headphones. The use of two rechargeable batteries provides low impedance and extremely low noise. The design also features a balanced input and a gain control which accommodates the many variables involved in headphone listening. A great addition to the audio enthusiast's equipment arsenal, the PHONES-01 kit will provide headphone listening with a minimum of coloration of recorded music. Batteries and charger not included. Shipping wt: 12 lbs.

**KB-PH01 .....\$399.00**

**Batteries & charger will be available from OCSL**

## SPECIFICATIONS:

**Sensitivity:** 135mV to 3V RMS (-15 to +12 dBu)

**Gain:** minimum:+6dB, maximum: +33dB

**Input Impedance:** 44k, balanced

**Common Mode Rejection:** >-80dB below 200Hz, -60dB below 40kHz, >-30dB to above 1MHz

**Input RF filtration:** -5dB at 200kHz and -6dB/Oct rate above

**Optimum impedance:** 200 to 400 ohms

**Powering:** 2x12V 2.2 ah lead-acid replenished at 12V by dedicated AC powered charger, or by 12V auto alternator, solar panels or wind generators with suitable charge regulation.

**Maximum Output Level:** 12.3V at 19° C: +18.3 dBu=410mW into 100 ohms and 205mW into 200 ohms, 102mV into 400 ohms, etc.

**Zo:** <0.3 including protection

**Damping factor** = >450x re. 150 ohms

**Bandwidth, into 150 ohms load:** -3dB below 0.15Hz & 120kHz

**Output noise, unwt'd, 20Hz-20kHz, average:** <-100dB at max. gain, <-125dB at min gain

**THD=N:** <0.01% at all gains, below clip & below 10kHz, with resistive 150 ohm load. Typically below 0.001% at listening levels, with benign harmonic structure.

**Dynamic CCIR IMD at 4kHz / 4.2 kHz:** 0.0015% at -20dB, rising to 0.007% at -3dB

## DEOXIT / PRESERVIT

Electronic Maintenance and Contact Conditioner System

**CAIG Laboratories, Inc. (<http://www.caig.com>)**

Some of the noise and distortion in your system is caused by poor electrical contacts in the numerous connectors. DeoxIT liquid removes the highly resistive metal oxide layer and other contaminants first, and then PreservIT protects the newly exposed surfaces from corrosion with a film just a few molecules thick. Although DeoxIT is nonconductive, it enhances the electrical contact, thus improving the energy transfer through the connector. If the film's integrity is broken, it "heals" itself, automatically redistributing the coating over the entire surface to reseal the breaks. How will it sound? Improving all the electro/mechanical connections in your system reduces the small amounts of noise and distortion contributed by each contact point. The sum of these can be large enough to be audible and will mask the subtle details you may have worked hard to obtain. DeoxIT is formulated specifically to eliminate contamination wherever contacts meet without solder—PC boards, connectors, sockets (including gold), in audio and electronic equipment, communications gear, and computers. In addition to brushes, lint-free cloths, swabs, and full instructions, one kit contains one 2-dram bottle (about the size of a bottle of nail polish) of red DeoxIT to dissolve away the tough nonconducting layer and one 2-dram bottle of blue PreservIT to provide protective coating. A favorite for years, and a great way to make a small but worthwhile improvement to your system. Shipping wt: 1 lb.

**KM-6 ..... \$29.95**



## WILLIAMSON LP RECORD CARE KIT

### Reg Williamson

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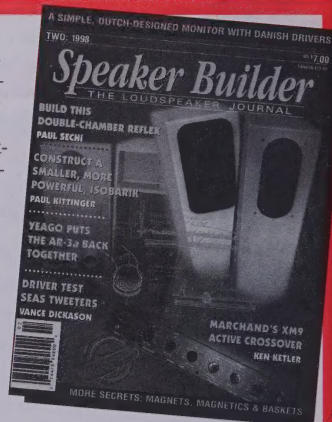
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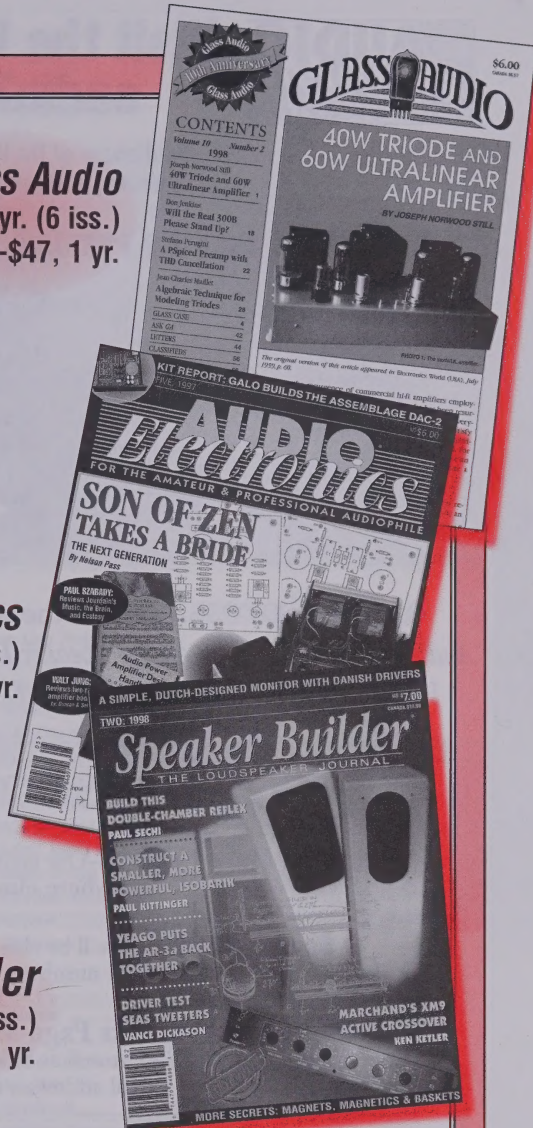
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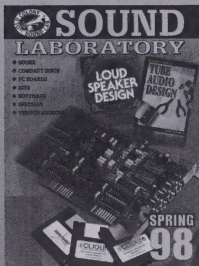


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You may be an expert in loudspeaker components, or you may have golden ears. Even so, you won't know which of these components is the best one, even though X is a famous brand and Y is a new name on the market. In contrast to loudspeakers, magazines do not emit sound. Therefore, we can tell you that Selenium loudspeakers are made by people as demanding as you, and that they are sold in more than 25 countries around the world, or even that Selenium delivers its components to professional cabinet manufacturers and major touring companies. But it doesn't help if you cannot listen to our products. Enough words. The best thing you can now do is to listen to Selenium loudspeakers in action.



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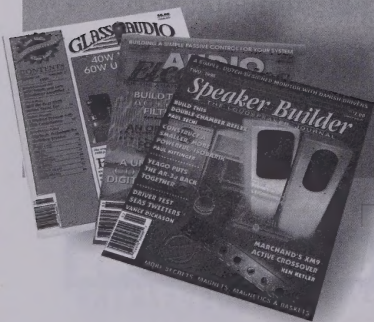
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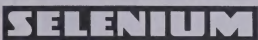
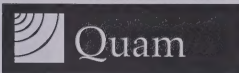
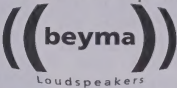
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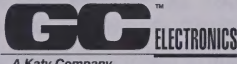
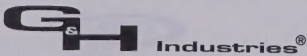
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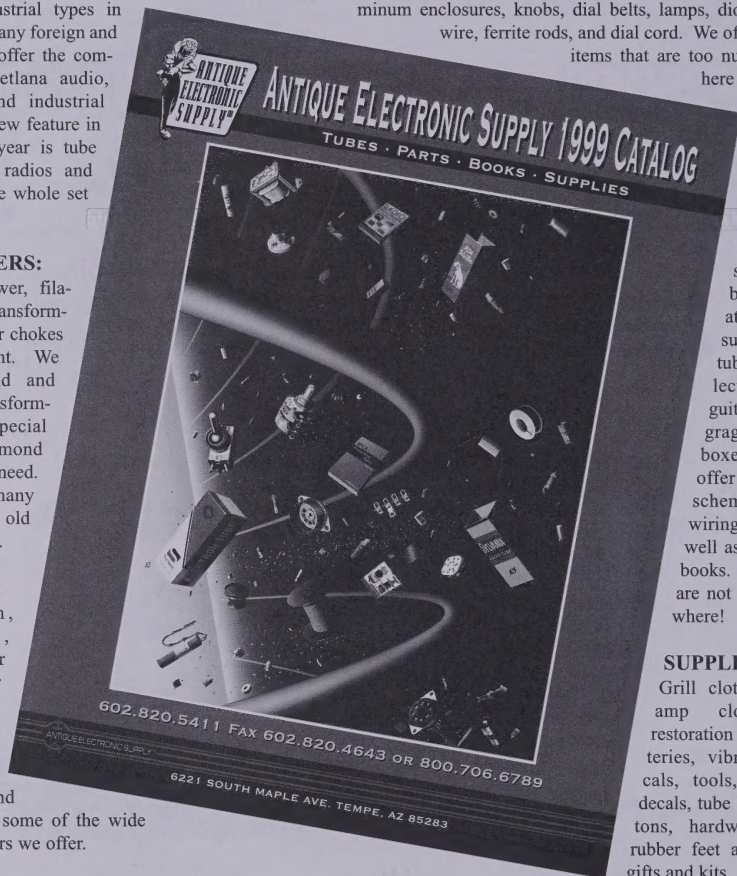
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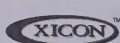
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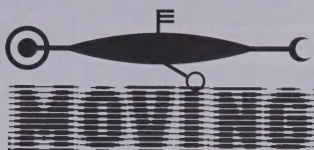
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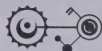


# NO



# PARTS

TRASH ALL OF YOUR WOOFERS, MIDRANGES, AND TWEETERS - AND I'LL EVEN INCLUDE ALL DIPOLES AND PLANAR MAGNETICS. ANY SPEAKER, WITH EVEN A SINGLE MOVING PART, IS FROM THE DARK AGES. THE ENERTIAL MASS OF THESE DINOSAURS GENERATE SPURIOUS WAVE FORMS, DISTORTIONS, AND UNPREDICTABLE OPERATION.



CRAWL OUT OF THOSE PRIMITIVE SPEAKER BOXES YOU'VE BEEN FUSSING WITH AND TRY TO ENVISION THE IDEAL LOUDSPEAKER - A MASSLESS SYSTEM THAT WOULD IMPART ACOUSTICAL MOVEMENT TO THE AIR IN EXACT DUPLICATION OF ITS ELECTRICAL INPUT WITH NO MOVING PARTS.



WE INVITE YOU TO ESCAPE THE TWILIGHT ZONE OF PREHISTORIC SPEAKER TECHNOLOGY AND JOIN THE AGE OF ENLIGHTENMENT - IONIC AND PLASMA LOUDSPEAKERS! MOVE THE AIR WITH NO MOVING PARTS! HEAR MUSIC THE WAY IT SHOULD BE HEARD, NOT FROM AN OUTDATED MECHANICAL CONTRAPTION, BUT FROM THE PURE VIBRATION OF AIR. THE SAME VIBRATIONAL SOURCE EQUIVALENT TO MUSICAL INSTRUMENTS OR HUMAN VOCAL CORDS.



I KNOW IT SOUNDS IMPOSSIBLE AND I EXPECT A CROP OF "IFS" AND "BUTS" AS YOU ARE PROBABLY SAYING TO YOURSELF: "BUT HOW CAN SOUND OR MUSIC BE PRODUCED IF THERE ARE NO MECHANICAL PARTS VIBRATING THE AIR?"



A VALID QUESTION THAT IS ONLY COMPOUNDED BY THESE FACTS: 1. IONIC AND PLASMA SPEAKERS USE NO BOXES OR ENCLOSURES. 2. THEY USE VERY FEW PARTS. 3. THEY CAN BE BUILT ON YOUR KITCHEN TABLE. 4. THEY ARE VERY INEXPENSIVE TO BUILD.

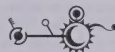
5. MOST OF THE PARTS CAN BE OBTAINED FROM COMMON LOCAL STORES SUCH AS BUILDING SUPPLIES, RADIO SHACK AND/OR ELECTRONIC SURPLUS.



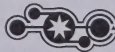
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# Swans M1 kit



The Swans M1 minimonitors open a new line of affordable high-end loudspeakers featuring several technological achievements and sound quality distinctions.

The speaker system is a two-way bass-reflex design. The front baffle is very narrow with rounded edges to reduce cabinet diffraction for better clarity and imaging. The internal panel and corner reinforcement substantially reduce unwanted cabinet vibrations. A flared port is mounted on the rear baffle for smooth transition from the port to cabinet boundaries. This provides linear bass performance and absence of port noise. The heavy-duty gold plated binding posts are mounted directly on the rear panel to enable easy cable connection.

The drivers used in the M1 represent a new high performance design from Hi-Vi Research. The 5-inch paper/Kevlar cone woofer has a rubber surround, cast aluminum frame and a magnetically shielded motor system. This driver utilizes a central phase plug to avoid air compression, improving frequency response and dispersion. The extremely rigid cone is hand coated with a special dampening compound to further maximize its performance. The cone is then coupled to a selected grade rubber surround that provides break-up free operation and very low distortion even at high power levels. These key features greatly contribute to the M1's clear transparent sound and effortless dynamic performance.

The tweeter is a high-tech planar isodynamic design that employs Neodymium magnets and extremely light Kapton® film, with flat aluminum conductors.

The vibrating element of the tweeter is almost weightless in comparison to a conventional dome driver. This unit provides an immediate and precise response to any transients in original signal, and gives the M1 an exceptional ability to reveal the true dynamics of instruments with a complex high frequency spectrum.

The crossover is a second order Linkwitz-Riley type resulting in an in-phase connection of the drive units. The crossover frequency between the two drivers is 3.3 kHz and only high quality polypropylene capacitors are used. Each filter has its own dedicated board mounted on a special rubber interface to reduce vibrations and microphonic phenomenon. The filter boards are spaced inside the loudspeaker with the inductors positioned at right angles to minimize the interaction.

M1 provide very even acoustic power dispersion. The important horizontal early reflections that create spatial impression and add to the overall presentation have the same even spectral balance as the direct sound, these are crucial features of a good loudspeaker.

On the contrary, the M1's vertical dispersion is well controlled in the high frequency domain in a 15° arc symmetrically to the reference axis. While 15° create adequate room for adjusting a listening position, the floor and ceiling reflections are well down in amplitude. This feature greatly contributes to the clarity of sound and imaging of the M1.

Swans M1 kit includes:

- 2x F5 paper/Kevlar bass-midrange drivers,
- 2x RT1C isodynamic tweeters with sealing gaskets,
- 2x dedicated tweeter crossovers,
- 2x dedicated bass-midrange crossovers,
- two flared ports and two swans logos,
- two pairs of heavy duty gold plated terminals.

Cabinets are not included.

The drawings of the cabinet shown here represent general dimensions required for optimum bass performance. Rounded corners are advisable as they improve imaging and clarity. Actual finish and appearance is a matter of personal taste.

Retail price: US\$ 410.00 (delivered)

Delivery in US within 4-6 days.

Warranty 3 years, 30 days money back guarantee.

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Swans M1 Speaker Systems Review

INNER EAR REPORT

Volume10, #3 1998



The step beyond the limits



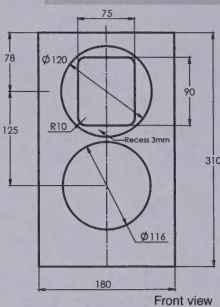
RT1C Tweeter



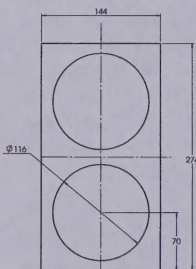
F5 Bass-midrange



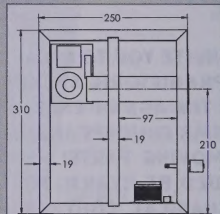
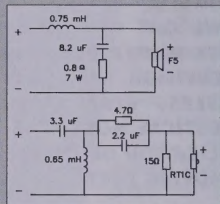
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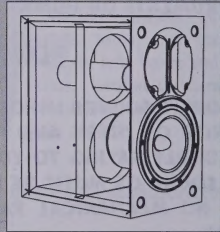
Front view



Internal panel



Right view of the cabinet with accessories (right side panel removed)



### SPECIFICATIONS

|                              |                  |
|------------------------------|------------------|
| Frequency response           | 60Hz-35kHz, ±2dB |
| (1m, half space)             | 55Hz-40kHz, -3dB |
| Sensitivity, 1W/1m           | 86 dB            |
| (100Hz-8kHz averaged)        |                  |
| Nominal impedance            | 8 ohms           |
| (7.2 ohms minimum at 250 Hz) |                  |
| Power handling               | 50W nominal,     |
|                              | 90W music        |
| Dimensions, HxWxD            | 310x180x250 mm   |

Amplifier requirements:  
30W recommended minimum.

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This book consists of 125 pages, 40 illustrations, design methods, and manufacturing guides. Written in 1984, it is a practical step-by-step design method for magnetic components. The book is intended for use by amateur electronic hobbyists, students of electronics, technicians, and trade schools desiring to do their own "in house" designs. This is made possible without a knowledge of magnetic theory being necessary.

The first part of this book is intended to serve as a starting point in learning a method of designing transformers and other wire wound magnetic components. The second part shows the new designer how the transformer is actually wound and put together.

The DESIGN GUIDES, if followed as described, will result in a design that will work as intended. There will be very little attempt to explain the theories or formulas used. Mr. Wolpert has used these methods successfully for many years in both the designing of transformers and in the training of new employees. All standard shop practices are clearly shown.

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- CHAPTER 2 - Single phase power transformer design
- CHAPTER 3 - Three phase power transformer design
- CHAPTER 4 - Auto transformers
- CHAPTER 5 - Power transformers using capacitive filters
- CHAPTER 6 - Converter transformers
- CHAPTER 7 - Shielding in power transformers
- CHAPTER 8 - Iron core filter chokes
- CHAPTER 9 - Air core inductors and solenoids
- CHAPTER 10 - Layer winding on a single core form
- CHAPTER 11 - Lead finishing
- CHAPTER 12 - Bobbin winding
- CHAPTER 13 - Assembly and stacking of magnetic cores
- CHAPTER 14 - Impregnation
- CHAPTER 15 - Testing the transformer
- CHAPTER 16 - Insulation materials
- CHAPTER 17 - Tables, charts, and design guides

## VOLUME TWO AUDIO TRANSFORMER DESIGN MANUAL

This book consists of 110 pages, 33 tables, design examples and methods, manufacturing guides, charts, material lists, construction details and testing procedures.

Written in 1989, it contains practical design methods for ALL types of audio transformers. The book is intended for use by amateur electronic hobbyists, students of electronics, technicians, and trade schools desiring to do their own "in house" designs. This is made possible without a knowledge of magnetic theory being necessary. The first part outlines the various parameters that must be considered in a successful design. The second part shows the methods of designing to meet the requirements, and how to calculate the results. The third section has specific examples of various audio transformers with a step-by-step design for each. There will be very little attempt to explain the theories or formulas used. Mr. Wolpert has used these methods successfully for many years in both the designing of audio transformers and in the training of new employees.

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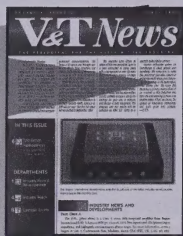
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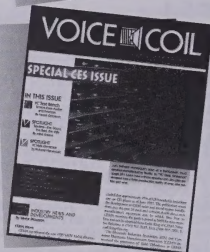
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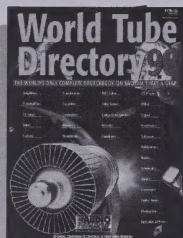
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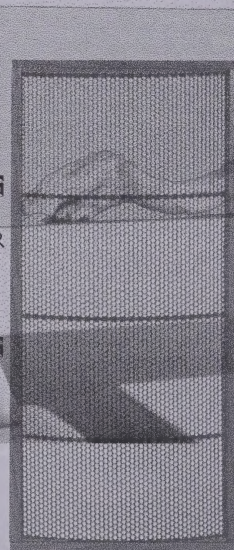
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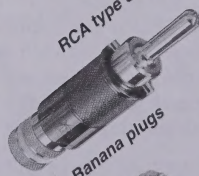
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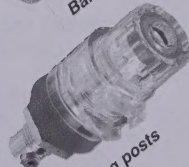
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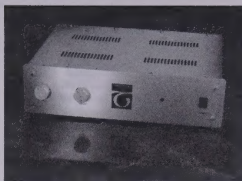
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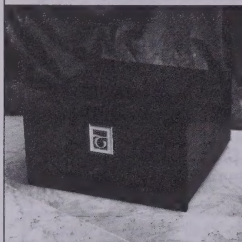
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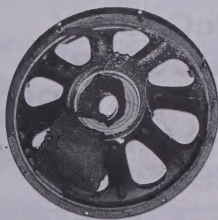
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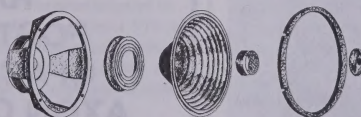


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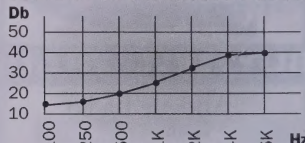
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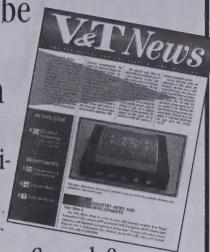
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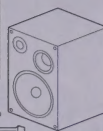
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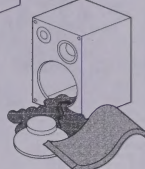
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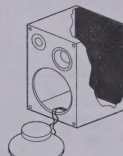


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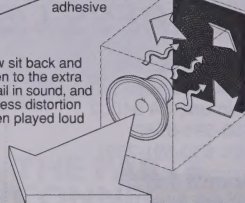
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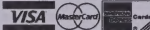
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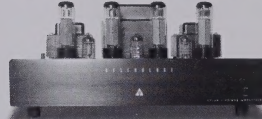
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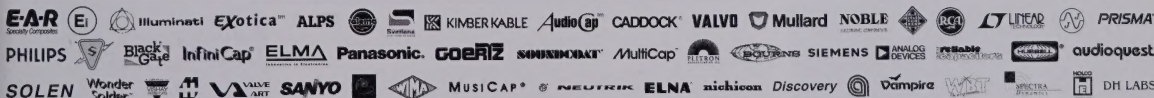
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